DOCUMENT RESUME

ED 085 846 EA 005 728

AUTHOR	Hedges, Henry G.
TITLE	Extending Volunteer Programs in Schools.
INSTITUTION	Ontario Inst. for Studies in Education, St. Catharines. Niagara Centre.
SPONS AGENCY	Ontario Dept. of Education, Toronto.
PUB DATE	Jul 73
NOTE	190p.; Related documents are EA 005 729, EA 005 730, and EA 005 731
AVAILABLE FROM	Niagara Centre, The Ontario Institute for Studies in Education, 187 Geneva Street, St. Catharines, Ontario L2R 4P4 (Canada) ($1.75)
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Academic Achievement; *Differentiated Staffs; *Elementary School Students; Individualized Reading; Models; *Program Evaluation; *Secondary School Students; *Student Volunteers; Test Results; Volunteers
IDENTIFIERS	Canada; Volunteer Parental Involvement

ABSTRACT

Documented here is a project involving three extensions or adaptations for using volunteers in schools. The first adaptation involves a plan for meeting certain major needs of a secondary school with volunteer help. This plan includes components designed to reorganize the secondary school curriculum to allow some of the students to study aspects of early childhood education and apply these studies through service in nearby elementary schools. The second adaptation studies the role of volunteer activities in a school wherein a modified differentiated staffing plan is already in effect. The outcome of this study is a description of the roles or functions performed by the various levels of staffing, including volunteers. The third adaptation deals with a plan for increasing the amount of volunteer help in an individualized reading program that led to a plan for vertical integration of classes. The report contains one section with chapters that deal separately in considerable detail with the three programs, present evaluation data, and offer suggestions for further implementation and adaptation. An appendix provides a general bibliography, the operational model, and other materials currently being disseminated to schools desiring to establish volunteer programs. (Page 106 may reproduce poorly.) (Author/MLF)

FILMED FROM BEST AVAILABLE COPY

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED 085846

EXTENDING VOLUNTEER PROGRAMS IN SCHOOLS

H.G. Hedges

July, 1973

An informal publication of

The Ontario Institute for Studies in Education

Niagara Centre

187 Geneva Street

St. Catharines, Ontario.

L2R 4P4

EA 005 728

$1.75

TABLE OF CONTENTS

Introduction 3

Chapter 1
Program D: Secondary School Students as Volunteers 13

Chapter 2
Program E: A Differentiated Staffing Model Involving Volunteers 56

Chapter 3
Program F: Volunteers in an Individualized Reading Plan 77

ACKNOWLEDGEMENTS

This project was funded by a grant from the Ministry of Education. We are grateful for the support that the Ministry of Education has given to the studies by Niagara Centre concerning wider public involvement in education and in particular studies relating to the role of volunteers in schools. We have also received generous interest and support from the principals, staffs, students and volunteers at the various schools that participated in this study. Special recognition is given to Mr. Ronald Cussons of the Halton Board of Education who devoted half of the academic year to volunteer studies and cooperated in program D of the present study. In addition the following people gave generous assistance in the collecting and interpreting of data and the preparation of this report: Mr. Allan Shynal, Mrs. Ginny Hopkings, Mrs. Margaret Mann, Dr. Robert Kenzie, Mrs. Joyce Slater, Mrs. Terry Windhager, and Miss Joan Jeske. Appreciation is also extended for their cooperation to the Wentworth County Roman Catholic Separate School Board, the Lincoln County Board of Education, and the Halton County Board of Education.

INTRODUCTION

This report documents a project involving three special extensions or adaptations of the general plan for using volunteers in schools. The project was funded for the year 1972 - 1973 through the office of Research and Development at The Ontario nstitute for Studies in Education, and was funded under contract with the Ministry of Education for the Province of Ontario. The main aspects of the project were conducted in schools of the Niagara Region, and in addition, one of the programs involved schools in Halton County.

The report contains three main sections: (a) the present introduction which describes the background to the present study; (b) three chapters dealing with the three major extension activities, which are the heart of the present study; and (c) the appendix which contains a wide range of the manuals, operational model, and other materials currently being disseminated to schools which wish to establish volunteer programs.

The main part of the present report, comprising chapters 1, 2, and 3, describes three independent extensions of the general model. Each of these extensions was conducted in a single school or in a group of cooperating schools. In each case the report for the school identifies the nature and needs of the program, the organization of the volunteer activities, the important phases of the project itself, evaluation procedures and the major outcomes. Some suggestions are made concerning the adaptation or application of the plan to other schools.

The purpose of this introduction is to indicate the origin of the project and to describe briefly the activities that have preceded the present project.

This project represents the fourth phase in a long-term study of volunteers in schools. Each of these phases has involved one or more research activities, the development of materials for use in schools, and broad-scale dissemination. The dissemination activities have now involved over one thousand schools in the Niagara region and in other parts of Ontario.

A brief description of the four phases of the study to date is provided in the section that follows.

(a) Niagara Survey. During the school year 1969 - 70 a major intensive survey of the use of volunteers was conducted in the Niagara region. The results of this study are reported in the monograph entitled Volunteer Helpers in Elementary Schools. The survey documented the extent of volunteer help in a sample of one hundred schools. It was discovered that forty-eight percent of the schools had at that time some level of volunteer activity, and approximately half of the remainder expressed an interest in establishing a volunteer program. An even more important long term contribution of this study was the taxonomy which was developed in order to classify into various classroom functions the tasks which volunteers performed in the school. This taxonomy, which enabled all tasks to be classified objectively into appropriate functions, was revised in subsequent studies and become the basis for the observation instrument used in the present study. The taxonomy had the further value of giving principals and teachers a broader vocabulary for descriptive volunteer activities than had been used previously. In fact, a study of the previous descriptions of volunteer activities implied that the activities of the classroom were seen by principals and teachers as being basically of two kinds, one called "actual teaching" and the other

called "supportive tasks". The use of the taxonomy readily established that many of the tasks in the classroom cannot be neatly categorized in either of the two broad groupings used by principals and teachers, and demonstrated that it was essential to have some more specific categories which would enable all activities of volunteers to be classified in terms of the function performed.

As a follow-up on the Niagara survey a more extensive survey of volunteer assistance was conducted throughout the province in the 1970 - 71 school year. Forty boards were selected as a representative sample study group. From this survey it was established that approximately fifty-two percent of the schools at that time reported that they had some form of volunteer assistance program. In almost every respect the picture for the province was roughly comparable to that for the Niagara region. It was found, for example, that the average number of volunteers per school in both studies was approximately nine volunteers, and also that the average amount of service per week for each volunteer was approximately one-half day. The results of these surveys indicated that the one-half day period is both the desirable and natural amount of volunteer help to be expected from parent volunteers. The provincial survey revealed that a few boards had no schools with volunteer programs at that time, and that a few boards had volunteer programs in all their schools. The remaining boards ranged from zero to one hundred percent with respect to the number of schools using volunteers. A rather surprising discovery from the survey was that a reasonably large number of schools had very large volunteer corps, often exceeding thiry individuals.

Both the Niagara survey and the provincial survey convinced the research team that there was a widespread interest in the involvement of parents and other volunteers in schools, and even more importantly, established that schools which had set about deliberately to develop a comprehensive program appeared to have little difficulty in recruiting reasonably large numbers of interested volunteers.

(b) The Operational Model. An analysis of the volunteer program in a large number of schools, coupled with the study of the stated needs in schools with respect to possible volunteer help, indicated that many volunteer programs were not developed on a planned or systematic basis, and often were not directly related to the stated needs of the school. As a result of this apparent gap between needs and program, the officers of Niagara Centre established an operational model whereby a typical school could implement a comprehensive volunteer program if it chose to do so. The model was tested in a number of schools during the school year 1971 - 72. The model, which is included in the appendix of this report, has six main phases (readiness, recruitment, training, maintenance, evaluation and extension), and further breaks each phase down into a series of chronological steps which should be followed in planning and implementing a volunteer program. The model also identifies the person or group who would assume the major responsibility for initiating or conducting the particular step or sub-step of the model.

The first three schools in which the operational model was tested and implemented had widely different characteristics. During this period the officers associated with the project worked on a fairly intensive basis

with the principals and staffs of the three schools. These activities included initiating activities, studying and applying various steps in the model, and a continuous monitoring and evaluation of the work of the volunteers and of the effectiveness of the model itself. Evaluations were conducted to determine the success of the program as seen by the principal, the staff, the parents, and the students. In one of the schools a complete evaluation project, including an evaluation of pupil gain was undertaken, and it was concluded that the total program of the school resulted in significant gains over three control schools. In addition, a detailed study was made, based on approximately 150 teacher days, of the effect of volunteer help on the time that teachers allocated to various functions. Using the revised taxonomy referred to above, a standard observation model was created and used in connection with direct observation in classrooms. In this study it was established that on the days in which volunteer help was used in the classroom teachers tended to double the amount of time devoted to upper level or professional activities, and the total amount of direct individual help given to students by an adult (teacher or volunteer) was almost quadrupled. It was contended that these two benefits, a doubling of teacher time in upper level functions and a quadrupling of adult time given to individual students, both represented major advantages of volunteer programs with respect to meeting commonly stated needs or shortcomings of the typical classroom.

Another outcome of the implementation of the operational model was the development of various materials which principals, teachers, and volunteers would use in one or more of the phases. As indicated above, some

of these materials are found in the appendix of the present report.

It was apparent both in the original study schools, and in the schools in which further dissemination was conducted, that the prime objective of volunteer programs, at least in the minds of teachers, was the direct additional help that they would receive in the classroom. The notion that the possible improvement of parental attitudes and the improvement of communication between the home and school would be significant outcomes or objectives of the program apparently had not been seriously considered by the teachers. Therefore, in the various documents some attention is given to questions of the improvement of parental attitudes and improved communication between parents and teachers.

In order to document the original implementation of the model, and to assist in the dissemination of the general model, a film entitled In Loco Magistris was prepared as a joint activity of Niagara Centre and the Ontario Educational Communications Authority. This film, selected as one of the five audio-visual presentations to be used at the Banff Conference in October 1971, has become the best known film on volunteer assistance in schools in Canada, and has been widely used throughout this country and the United States. The film has been used over two hundred times during each of the years since its original production and has been used several times in television series on innovations in schools.

The implementation of the model in the three original schools and in a large number of schools in the dissemination phase made it evident that there are many other specific needs in schools in addition to general classroom assistance that could be met in part or fully if an adequate compre-

hensive volunteer program were established and maintained. The identification of some of these major needs of schools and the development of adaptations of the general model to meet these needs formed the basis for the third and fourth phases of the long-term study.

(c) The First Three Adaptations. In a project funded by the Ministry of Education the first three major extensions of the model were implemented in the 1971-72 school year. These three studies became the subject of an informal publication of Niagara Centre of The Ontario Institute for Studies in Education entitled Using Volunteers in Schools.

The first extension of the volunteer program was implemented at Fessenden Public School, Ancaster, as a means of enabling the staff to become a curriculum development team. It was found that the general volunteer program could be adapted to provide the staff with as much as two hours per week for curriculum development, with the volunteers, who were mainly parents, providing the administrative and supervisory support required so that teachers could be absent for various periods of time from their classrooms. No negative results of the study were discovered. The school in question has continued its volunteer program into the present school year. Considering the growing importance of curriculum development at the county, local, and school level, the findings of this program may be expected to make important contributions to alternative approaches for freeing teachers to work on curriculum; perhaps as many as fifty percent of elementary schools could adapt volunteer programs to this important need.

The other large scale need that was tested in relation to a volunteer program was the intent expressed at St. Daniel's Separate School in

Hamilton to integrate the special education program into the regular curriculum of the school. This school had already developed a basic parent volunteer program, and it proved relatively easy for the principal and special education teacher to adapt this program to meet the needs of special education in the school. In the process, more pupils were dealt with on an individual basis than had been the case in the previous year. The program for parental involvement in the special education program required four special elements -- a comprehensive testing program for all pupils; assignment of volunteers to classrooms to enable teachers to prepare student profiles; a systematic organization of the profiles to determine the pupils who required special education at various times; and a flexible but thorough plan for providing daily the specific additional instruction required by individuals. This adaptation was evaluated by the staff as being highly successful both in meeting the needs of special education in the school and of reducing the negative feelings that many youngsters usually have as a result of being identified as having special education needs.

The third adaptation of the parent volunteer model explored a plan whereby teachers could spend significantly larger amounts of time in the most critical classroom functions of planning, interacting with individual students, determining students' readiness and initiating and consolidating important new mental structures. This program was implemented in Victoria Public School, St. Catharines, and was conducted in keeping with a rigorous experimental design including systematic pretest and post-test evaluations of pupil growth.

In this adaptation it was found that the teacher learned to transfer more than fifty percent of her time to upper level functions, and that most of the supportive and low-level instructional work could be done competently by parent volunteers. In this situation the amount of individual attention received by each pupil was multiplied several times. The results as expressed in pupil gain were in some instances dramatic. The study documented gains of more than a year in all the major objectives tested, with gains as high as a 2.0 years average in areas such as reading comprehension. It was noted that the greatest gains were made in those areas in which the volunteers spent large proportions of their time.

(d) Three Further Extensions. The fourth phase of the general study, which is documented in the present report, involves three additional extensions of the general model. Briefly, the report and project deal with three distinct programs.

Program D involves a plan (somewhat modified in practice) for meeting certain major needs of a secondary school with volunteer help, and includes four components designed to reorganize some aspects of curriculum in the secondary school so that some of the students can study aspects of early childhood education and can apply these studies in service in nearby elementary shcools.

The second program, entitled Program E, studies the role of volunteer activities in a school in which a modified differentiated staffing plan is already in effect. The outcome of the study is a description of the roles or functions performed by the various levels of staffing, including volunteers.

The third program in the present study deals with a plan for increasing the amount of volunteer help in an individualized reading program in order that the individual needs of pupils can be met at the proper stage of readiness. Such a plan in operation involved some reorganizational aspects of the grade structure, and in the present study led to a plan fr vertical integration of classes.

The following three chapters deal separately in considerable detail with the three programs referred to above, and present evaluation data and suggestions for further implementation and adaptation.

Chapter I

Secondary School Students as Volunteers in Elementary Schools

For many years there have been isolated examples of secondary school students assisting in specific ways in nearby elementary schools. In general, such activities have been viewed by the staff of the secondary school as being unrelated to the secondary school curriculum and of being of benefit essentially to the elementary school teachers and children. Despite a growing body of research, mainly in the United States, establishing that when secondary school students assist as volunteers in elementary schools they make important academic gains, such research has apparently had little or no effect in Ontario in terms of any large-scale movement toward encouraging secondary school students to serve as volunteers in elementary schools. In brief, existing programs of secondary school volunteer assistance are based on the benefits students give to others rather than the gains that they themselves might potentially achieve. Further, in most programs in which secondary school students serve as volunteers in elementary schools their volunteer activities appear to be completely unrelated to their secondary school studies.

The purpose of the first program in the current project, entitled Program D, was to determine whether a comprehensive volunteer program could be established in secondary schools, whereby large numbers of secondary school students could work in nearby elementary schools in activities that were deliberately related to their secondary school studies and which would enhance the volunteering students' achievement.

It was assumed that the development of such a plan would be facilitated if the author also assisted the secondary school staff to develop or enlarge the parent volunteer program within the school and to assist the school in exploring the larger pool of talent that would be available to the school. In planning the program then, four main components as follows were conceived:

(1) A procedure for categorizing the activities of secondary school teachers in the classroom and organizing these activities into a classification system which would enable the teachers to define more precisely the appropriate roles of teachers and of volunteers. The existing taxonomy of classroom functions would be tested and modified through observation, analysis and discussions with teachers.

(2) An exploration and identification of the total pool of talent in the community, including parents, business and professional people and CAAT and university personnel (including students) followed by an assessment of their potential contribution as volunteers in secondary schools.

(3) The development and introduction of a unit on early childhood education as part of an existing sociology course at the grade 12 level.

(4) The induction of the students in (3) above as volunteers in a nearby elementary school or with individual students at the grade 9 or 10 level within the school.

An invitation to implement some aspects of this program was received from a number of schools in Halton County. At approximately the same time Mr. Ronald Cussons was assigned for a four-month period to study the role of volunteers in Halton Couniy schools prior to his appointment as an ele-

mentary school principal. Because of Mr. Cussons' own interest in exploring the role of secondary school students as volunteers, in addition to his more general interest in the subject of volunteer help in schools, the author decided to accept the invitation to work with him in the Halton system to explore the role of secondary school student volunteers. So successful was Mr. Cussons in developing volunteer programs that he was able to obtain additional financial assistance through the Local Initiatives Program, so that a number of assistants were employed who helped in the organization of various volunteer programs and in particular assisted in the data collection for the current project. As a result we were able to increase several-fold the amount of direct observation in classrooms. Mrs. Ginny Hopkings devoted many days to structured interviews with secondary school student volunteers and their teachers in both the secondary and elementary panels. A copy of the questionnaire employed is found in the appendix. Mrs. Margaret Mann was employed for approximately forty days in collecting the data on the effect of volunteer help on teacher performance described later in this chapter and documented in Tables 1 to 12 of this report. The cooperation of Mr. Cussons and the involvement of these special assistants resulted in a much more broadly based study than had been anticipated in the initial stages.

A second benefit derived from cooperation with Mr. Cussons was the fact that he and his assistants were willing and able to take over those components of the plan which related specifically to parent volunteers within the secondary school. Most of the secondary schools involved in the study have had ongoing volunteer programs for some time, with volunteers

working mainly in library resource centres and in supportive activities in a number of subject areas.

With this cooperation it appeared unnecessary to devote any major part of the project's activities to further development of the volunteer programs within the secondary schools or in fact to explore further the talent pool in the local community. Instead, it enabled us to devote our energies in the program mainly toward the involvement of secondary school students as assistants in elementary schools and to designing procedures for documenting and describing their activities.

It was found that staff members of the secondary schools, both as individuals and as members of departments, expressed considerable interest in the question of secondary school students working as volunteers in elementary schools, particularly in view of the possibility that some topics within the curriculum could be applied in such activities. The original intention of developing a course in sociology in order to provide both the background and the time for students to serve as volunteers appeared to be unnecessary, at least in the initial stages, because in each of the schools in which we worked we found adequate numbers of staff members who were prepared to relate their own subject to the role of their students as volunteers. It seems both logical to suggest that as the role of secondary school student volunteers expands this activity should be recognized more formally in the secondary school curriculum, and one means of doing this would be to provide a course which would give some background in early childhood education.

In the meantime, more evidence may be required concerning the functions that students can perform effectively as volunteers, in order that the proposed course can be closely linked to practical applications.

Through the efforts of Mr. Cussons and his assistants volunteer programs for secondary school students were developed in several of the high schools in Halton County. For purposes of the present program two of the high schools in particular were selected, namely M. M. Robinson High School in Burlington and Blakelock High School in Oakville. In addition, less formal studies were conducted with students in Lord Elgin and General Wolfe High Schools.

In each of the high schools staff members were invited to participate in the program and to identify areas in their own courses which would have a direct relationship to volunteer activities in nearby elementary schools. Naturally, the greatest amount of interest in this type of linkage was forthcoming from areas where an apparent relationship already existed, in particular physical education, art, music, and geography departments. In addition, the English, mathematics, home economics, technical, business, science, sociology, and history departments of various secondary schools become involved in the project. To some degree the extent of involvement was related more to the interests or commitments of senior personnel than to the identity of the department itself. For example, the head of the history department in M. M. Robinson High School showed considerable interest in the topic and assisted in developing the plan used in that school.

In setting up the project it was agreed that additional periods would not be given to students in the initial year for volunteer work, but that they would have to conduct such activities within the periods formally assigned to the subject or in spares and other free time. Also, students required approval for their activities from their secondary school teachers. It seemed wise in the initial stages to avoid criticism from teachers of

other departments who might not feel the same commitment to the project as those departments from which the students were recruited; therefore, every attempt was made to avoid problems relating to attendance in other departments.

In the two schools representing the heart of the study the nearby feeder elementary schools were approached, and were found to be very enthusiastic about the plan. For M. M. Robinson, seven feeder schools were located, six public and one separate, all but one within two miles of the high school. In the Blakelock area eleven feeder schools were involved, eight public and three separate.

In order to explore some of the administrative problems involved in matching secondary school staff interests, student participation, and the identified needs of elementary schools, two distinctly different models of organization were employed.

The program at M. M. Robinson High School was organized around needs of the elementary schools. The staffs of the elementary schools were asked to state needs which they felt could be met by secondary school involvement, and to assemble this information on data sheets. These included the kind of help they wanted, proposed departments of the secondary school from which this help could be drawn, the grade level to be served, the number of students they could employ, the time of the day and week they wished this help, etc. These requests from the elementary teachers were assembled and given to each department of the secondary school. The departments made this information available to students, and invited students who felt they could match some of the needs identified by the elementary teachers to contact the appropriate

school or teacher and to discuss working with them on a mutually agreeable basis.

In Blakelock High School the plan for dove-tailing needs of the elementary school and the interests and competencies of secondary school students was organized in exactly the opposite direction. In this case secondary school students completed a student volunteer biography sheet including pertinent information as to the sponsoring department, a grade level in which they are interested in working, the times available for volunteering, the type of tasks they would like to do in the elementary schools, the preference of elementary schools, etc., along with any special interests, hobbies or talents that the student might share with younger students. These information sheets were organized according to the schools of preference and made available to the staffs of the elementary schools. The elementary teachers examined this pool of talent available to them and selected particular students whom they contacted for assistance. This model arranged for the elementary teacher to choose the student whom he wished to involve, whereas in the Robinson model the student was in effect selecting his teacher.

In each of the two models described above considerable success was achieved in matching secondary school students with elementary teachers. In each instance well in excess of one hundred students and a comparable number of elementary teachers were involved. One can see advantages to each of the models. The Robinson model theoretically provides for a wider range of needs to be identified and met; however, it was found that the actual jobs that elementary teachers suggested often were not clearly defined, with the

result that students often failed to volunteer for some of the needs that were identified. In the Blakelock model theoretically the plan provides for meeting the interests of the secondary school student more fully; also, if enough biographical sheets were available for each elementary school many or most of the needs of the elementary teachers would also be met. These advantages are further discussed in the section on teacher evaluation.

In both projects plans were instituted to ensure that there was communication between the high school department and the elementary school teacher, in order that the department would know where the student was working, what his function was, etc.

In addition to the information given in the evaluation section that follows, certain advantages of the models described above are evident, when compared with less structured programs in existence in other secondary schools. First, these programs were based on a matching of student interests and teacher needs. Secondly, they provided for a commitment or contract between the student and the teacher and for regularity of attendance and service. Third, the identification of the activity with the curriculum of the secondary school department has obvious merits, the potential of which has not as yet been fully explored. It was evident that from some departments students were able to apply knowledge and skills that they were developing in their secondary school classwork. In other cases there appeared to be relatively little relationship between the academic aspects of their high school program and the function being performed in the elementary school. Even where no such match could be observed, one must consider the values to the student in the affective areas of his growth.

In these two programs credit in the secondary school subject was given for various kinds of volunteer service in the elementary school. This formalized the relationship between the department and the elementary school and gave supportive recognition to the activity. In some cases the student reported by essay or other form to his secondary school teacher.

Perhaps it is natural for secondary school departments to commence volunteering in keeping with a model such as one of the ones described above. The more formal development of a course or unit in secondary school directly related to instruction in early childhood education, with volunteering an integral part of such course, may be a second phase. In any event, the author found relatively little enthusiasm on the part of secondary school teachers toward preparing a course and submitting it for approval to the appropriate authorities. No doubt their feeling was that they would like to have some experience with students as volunteers before committing themselves to a large scale formal course on early childhood education and volunteering.

TASKS PERFORMED BY STUDENT VOLUNTEERS

An ideal arrangement for volunteer service by secondary school students would be to have all activities relate to the academic work of the student and the development of affective characteristics and arranged to meet the classroom needs of elementary school teachers and pupils. These three criteria were in fact attained to a very large extent in the program; however it is natural that at times only one or two of these criteria were met. The elementary teachers' identification of needs in the classroom which volunteers

might fulfill at times did not take into consideration the academic growth of the student. Similarly those activities which were most valuable to the secondary school student as a learner would not in all cases have been particularly useful to the elementary teacher. No doubt in further extensions of plans for involvement of secondary school volunteers frank communication between the secondary school and the elementary teacher with respect to the most worthwhile contributions of the secondary school student and the most pressing needs of the elementary classroom will help to resolve any mismatch that may occur in the kind of service rendered.

The observer teams and the assistants who conducted the structured questionnaire found a very wide range of tasks performed by secondary school students in the participating elementary schools. An examination of a sample list of typical tasks performed shows that various functions of the elementary school teacher were in fact performed by the vounteers. Such functions as initiating new learning, consolidating new learning, adding content to existing mental structures, drill, review, listening to students read, supervising classes or groups, remedial instruction with individual students, supervising playgrounds, conducting children on field trips, marking pupils' work and performing a myriad of semi-technical and non-technical tasks were representative of the activities of the students. The following is a sample of the statements by students and teachers of the activities of these volunteers; these are taken directly from the report forms:

-- maintaining audio-visual equipment
-- taking groups on field trips
-- taping stories
-- teaching children to use audio-visual equipment

-- taking a science inventory
-- supervising experiments
-- listening to pupils read
-- teaching girls cooking
-- helping individual pupils with math problems
-- supervising an art lesson
-- supervising a classroom
-- helping with coats and boots
-- taking attendance
-- demonstrating physical education
-- refereeing games
-- helping individuals with research reports
-- conducting a discussion about a film
-- filing pupils' records
-- conduction flashcard drills
-- testing visual and auditory discrimination
-- supervising the playground
-- marking spelling and mathematics
-- demonstrating art techniques
-- typing pupils' stories
-- teaching geography lessons
-- conducting science demonstrations
-- preparing a library card catalogue
-- carding and shelving books
-- conducting word drills
-- reading stories to pupils
-- conducting group discussions
-- organizing a fashion show
-- helping rehearsal of a play
-- helping pupils with homework problems
-- typing library reports
-- dictating spelling
-- running dittos

-- preparing a bulletin board
-- teaching a drama group
-- supervising social events
-- teaching a cooking elective
-- teaching visual perception games
-- teaching pupils to serve on school council
-- remedial reading
-- supervising bus routines
-- teaching lessons on grooming
-- lunch room supervision, and
-- helping administer Frostig program.

No attempt was made to catalogue the amount of time that students spent on each of these or on numerous other tasks in the classroom. The most complete information available on the distribution of students' time will be found in the evaluation section of this chapter, specifically in Tables 5 and 6 which give a breakdown of students' time allocations to various classroom functions for a selected group of students for whom detailed observations were compiled. A discussion of this breakdown of student time is provided at the appropriate section of the evaluation comments.

EVALUATION

(a) Administrative Considerations. As indicated above, both plans for the administrative treatment of secondary school volunteer assistance appear to work satisfactorily and to have certain advantages. In order for either plan to operate some evidence of interest and commitment by departments in the high schools is required, and elementary teachers must be prepared to identify various tasks or needs in their classrooms which they foresee as suitable areas for involvement by secondary school students. The match between the academic values to the secondary school student and the manpower

advantages to the elementary teacher cannot be matched adequately through any administrative procedure above. Both plans will go part way toward dovetailing these two needs, but face-to-face communication between the volunteer and teacher, and open conversation concerning the success of the student's activities appear to be the only means of ensuring that both needs will be met to a reasonable degree.

Provided that the two components referred to above are met, and provided that there are feeder elementary schools within a reasonable distance of the secondary school, there seems to be every reason to suggest that a plan of either type could operate in almost any secondary school. In the initial stages it seems probable that teachers will restrict the volunteering services of their students to those areas and times that relate specifically to their own subject areas. As evidence grows about the benefits of volunteer programs to the secondary school students themselves, it well may be that many secondary schools will provide more flexible opportunities for students to assist in elementary schools. This may involve special time-tabling arrangements at the secondary school level, the identification of volunteering as a bona fide activity in the secondary school, or provision of more individualized time-tabling approaches so that students can themselves work out to a larger extent the arrangements for providing volunteer help in nearby schools.

(b) Attitudes of Student Volunteers. With the use of the student volunteer ancedotal interview form, which is shown is the appendix and which was used as the basis of a structured interview, it was possible to obtain evidence of perceptions and attitudes from a very large number of secondary

school student volunteers. In the questionnaire students were asked for their reasons for becoming volunteers, for evidence of what they have learned as a result of volunteering and evidence of ways that they have been changed as a result of these activities. They were also asked to estimate or describe effects on the elementary school students resulting from their own help. The interest, enthusiasm and complete approval of the concept of volunteering as stated by the volunteers themselves in the most striking aspect of the interview forms. Almost all students indicated evidence of what they regard as important benefits to themselves both in what they have learned from volunteering and of information about changes in their own academic work or attitudes. Perhaps it is not surprising to find these responses to be overwhelmingly positive, in view of the fact that volunteering was in a sense a self-selecting process which probably resulted only in those with reasonably positive attitudes and commitments becoming involved. Even when one allows for this probability one is impressed with the outspoken support and interest of the students as stated on the interview forms.

Among the reasons given by students for becoming volunteers were a desire to help others, a desire to improve the elementary school program, a desire to help meet identified needs in elementary schools, a wish to know more about elementary children, a chance to see if there might be a future career in teaching, an opportunity to apply some of the things learned in secondary school courses, a desire to be helpful to others and an opportunity to make interesting use of spare time.

In response to the question about what the student learned from his volunteer work the most common responses had to do with techniques for learning

how to handle children. Many students also indicated that they had to learn to be responsible, to learn to organize and plan work more effectively and to analyze learning difficulties in greater detail. The most common single response was that they learned a great deal about children.

In response to the question concerning how volunteering had changed the respondent, many of the students commented on career opportunities, stating that their volunteering had helped them try out skills or test out their own ideas about various occupations such as audio-visual technician, teacher, social worker, etc. A large number of students commented on changes in attitude and behavior toward their own secondary school work. Some of them said that they had learned to "grow up"; others commented on the development of tolerance, patience and responsibility. A large number of students commented on the confidence that they developed in the program. Another common theme was the understanding and appreciation of the complexity of a teacher's role. Also commonly expressed were evidence of feelings toward children and particularly to children with learning difficulties. A remarkable number of students stated that "It was exciting"; "I liked helping children"; "It made me feel good"; "It made me feel I was doing something worthwhile for others." Such evidences of fulfilment and changes in affective learning for some students were the most significant outcomes of their volunteering activities. A number of students commented on what their volunteering activities had produced in terms of their own behavior. In addition to statements concerning planning and organization many students commented on what they have observed about learning independently, about analyzing their own learning difficulties, about the value of drill and review, and

about the value derived from teaching someone as a method of learning.

Almost all the students interviewed had positive, and some also had critical, suggestions for improving the volunteer program. A common theme was the need to have more opportunities for volunteer service over an extended period of time. The frequency of this statement tended to support the students' statements about advantages and attitude changes. Some students observed that there would be value in some instruction about learning techniques, individual differences, levels of child development, etc. A common complaint was that teachers often had not organized adequately for the volunteering opportunity that they provided. A few students commented that the elementary school was not challenging students adequately and was not providing adequate opportunity for individual treatment. A few students indicated that they had not been given meaningful activities, and provided supportive evidence for such claims.

Altogether an analysis of the numerous student interview forms convinces the reader that almost all the students enjoyed their volunteering activity, were able to identify advantages to them as individuals in both cognitive and affective areas of their growth, and would like to continue or expand their volunteering service.

Although no formal evaluation was conducted concerning the attitudes of elementary students to the volunteers, many of the volunteers themselves observed that the elementary school children liked them, appreciated what they were doing, and frequently asked when the secondary school student was coming back to their classroom.

A number of students commented on improvements in their academic

progress which they attributed to volunteering. Some claimed gains of a grade (A, B, C, etc.) over their previous record in various subjects. This perceived advantage was discussed by two students who were asked to describe their activities on the CBC National Radio program "This Country in the Morning", in June, 1973.

(c) Evaluation by Secondary School Teachers. Because the period and frequency of voluntary activities by secondary school students varied from student to student as well as between departments and schools, and because there was no means of obtaining adequate pre-test scores for the very large number of students involved, it was not possible to document statistically the gains in academic components of the work of the students. Lacking such documented evidence, we have had to rely on statements of the students themselves and comments by their teachers. Reference is made in an earlier section the students' perception of their growth. Most of the information obtained from secondary school teachers was collected from informal interviews and conversations with secondary school personnel. These discussions confirmed the student's own perceptions of their changes in the affective areas of their growth. Teachers commented on the growing sense of responsibility, confidence and interest in school work, as well as improved planning and organizational patterns. Most of the teachers with whom discussions were held were receptive to the idea that academic gains were probably being made as well, but insufficient evidence was available for reaching any conclusion comparable to that derived in some of the more formal studies on the question in the United States. Some of the teachers believed that gains could be expected and were achieved in those situations in which the student was

able to practise skills or content from secondary school subjects. In the absence of any documented test results we hesitate to make any general claim in this area. In view of the success of the program in recruiting large numbers of students it apppears desirable that a study should be made in which secondary school students are involved as volunteers for periods great enough in length and of sufficient frequency to have a chance of producing significant growth gains, and of conducting a study using pre-test and post-test scores on specific academic objectives to determine whether or not voiunteering actually does enhance student growth under conditions similar to those in the current study. In view of the stated opinions of students and teachers it seems reasonable to suppose that the research on this question from the United States can be replicated with similar results in this province.

One final piece of evidence of the perceptions of secondary school teachers was their continuing interest and commitment in the program and their inclination to increase the number of students participating. This tendency on the part of the teachers probably implies that they saw adequate benefits to the student to justify the additional administrative work involved in expanding and maintaining the program.

(d) Evaluations by Elementary School Teachers. For the other side of the effectiveness of the volunteer program, namely its benefit to the elementary school we relied on the observations, statements and evaluations of the elementary teachers involved as well as the evidence presented in section E below on the effect of volunteer help on the performance of these teachers. In determining the impact of the volunteers it would have been ideal to have measured their effectiveness on the academic growth of the elementary school

pupils. However, under the circumstances this would have been almost impossible to arrange, because of the varied periods and frequency of volunteer help and the very large number of students involved. In order to evaluate this aspect thoroughly one should select one or two classes which can be provided with considerable volunteer help over an extended period, so that pre-test and post-test results can be compared against control classes where student volunteers are not present.

It was assumed that if teachers continued to engage students as volunteers in their classrooms some benefits either to the students themselves or to the teachers would be observed by the teachers. Therefore, it is assumed that teachers' continuing commitment to the program and their own statements about the effectiveness of the student volunteers will be a rough indicator of the effectiveness of the volunteers in terms of the needs of the elementary school. It well may be that such evidence will bear more heavily on evidence of success it meeting <u>teachers'</u> needs than in providing for additional growth on the part of the elementary school pupils.

Information concerning teachers' attitudes towards their student volunteers was obtained from a very large number of elementary teachers through the adminstering of a teacher anecdotal interview form re volunteers, a copy of which is found in the appendix. On this form the teacher or the interviewer recorded statements of the kinds of tasks performed by the volunteer, evidences of benefit to the students and the teacher, evidence of the effect of volunteer help on the teacher's time allocation and evidence of changes in the student volunteer. In addition, teachers were asked to record major problems and suggestion.

Over 95% of the teachers cited advantages to their pupils and advantages to themselves as evidence of the value and effectiveness of the volunteers. The most commonly stated advantage both to the pupils and to the teachers was the opportunity for the teacher, or the teacher and volunteer, to spend more time with individual students. As other benefits to the pupils, the teachers stated that the presence of the volunteer improved the social relationship in the classroom, gave the students a lift or a variety of teaching techniques, provided additional help for special students, greatly expanded the amount of drill and oral reading provided, and gave opportunities for the development of such objectives as respect for another person. Among other advantages stated by a large proportion of the teachers was that the workload of the classroom was lightened or that the total amount of productive work in the classroom was increased. Many of the teachers stated that they had more teaching time when volunteers were present, that they were able to spend more time at planning and remedial work, and that extra drill was provided. Several teachers stated that as a result of the presence of the student the classroom was more relaxed and less confusing. Several teachers said that there are so many jobs to be done today in a classroom that an extra pair of hands is much appreciated.

A number of the teachers had criticisms of the program, along with some positive suggestions. The most common weakness appeared to be that the students were not in the classroom with sufficient frequency or regularity. This problem complicated the involvement of the teacher and also increased relatively the amount of training that the volunteer would require. From comments on this point it was clear that many of the teachers would be prepared

to accept a volunteer with much greater frequency than was applied this year. This problem was compounded on those occasions where the student did not arrive when expected.

The negative aspects of the student contribution as stated by teachers were that some of them had serious limitations in their ability to help, some were either irresponsible or unreliable in carrying out their work, and a few tended to want to take over situations rather than await directions from the teacher. However, the number of teachers making such complaints was a small minority.

The generally positive statements by the teachers concerning benefits to the pupils and to themselves, the frequent suggestion that the program be expanded, the teachers' statement that they would be able to use more volunteers or use them more regularly, and the frequency with which teachers felt it worthwhile to make positive suggestions for the program all are taken as evidence of the program having been positive and useful from the teachers' viewpoint.

The one administrative aspect of the plans which received frequent comment from the teachers was the fact that the teacher and volunteer did not seem to have an opportunity to meet with each other before making a final commitment to the program. Many of the teachers felt that there would be value in meeting the students in advance of their assignment to the classroom and also of having a longer initial period for discussing the student's role in the classroom. The author does not believe that it would be difficult to make an administrative arrangement that would enable the teachers and volunteers to meet in group situations before being formally assigned to each other.

(e) Effects of Volunteer Help on Teachers' Time Allocations. The most intensive and thorough aspect of the evaluation of the project was concerned with the effects of the volunteer help on teachers' time allocations. From previous studies (Hedges, 1972) it has been established that the presence of parent volunteers in the classroom has had positive effects on the teachers' allocation of time to the various functions of the classroom. The purpose of the present evaluation was to determine whether assistance of secondary school students as volunteers also tended to enable teachers to spend more time at upper level activities and to devote more adult time to individual students. The design for such observations was relatively simple, and copied the procedures used by Hedges and others in making similar observations on adult volunteers and paraprofessionals.

Thirty classrooms were selected in which the secondary school students were serving as volunteers on a long-term regular basis. In each of these classrooms one or more sets of observations were made, each such observation being thirty, forty, fifty or sixty minutes in length, with all period of time in each set being constant. Each set of observations involved three tables of data. On one visit the teachers' time allocations were recorded in a period when the teacher was working alone, i.e., without a volunteer. The second observation repeated the process during a parallel time period when a volunteer was helping the teacher. The third observation recorded the activities of the volunteer during the same time period as the second observation of the teacher.

The observation instrument employed in the study was the Hedges' Taxonomy of Classroom Functions, a copy of which with its accompanying manual are found

in the appendix of this report. This taxonomy has been widely used for this purpose.

The data were collected by two of the assistants in the Halton project and by officers of the Niagara Centre, including the author. Training periods were provided for all data collectors and sample tests of reliability indicated that inter-observer reliability was in the range of 90%.

One possible weakness of the present study was the failure to establish teacher stability prior to conducting the observation. Some of the variation in teachers' time allocations from one period to the other may be regarded as accidental changes. However, it can be anticipated that such changes would probably occur in both directions and therefore would be averaged out. Also, it was established in earlier studies that teacher stability with respect to time allocations for parallel time periods is extremely high. Therefore this weakness does not pose a serious threat to the reliability of the study.

By referring to Tables I to I2 the reader will readily discover how the data were recorded. Using an expanded observation sheet with the taxonomy and columns shown on Table I, the observer was able to time the various tasks that teachers performed, allocate them to the various functions shown on the sheet, and also ascertain whether the task was performed with the class, a group or an individual, and whether such grouping was on a regular or special basis. The time allocations for each teacher were totaled at the end of the observation periods. Tables I to I2 show the accumulated time for each type of session for all thirty teachers, and include for some teachers two sets of such observations.

TABLE I Time Distribution Data for Twenty-five Teachers in Sessions without Volunteer Students, Recorded in Minutes

		CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
1)Planning	a) Broad Planning	86		18				104
	b) Specific Planning	36		4		8		48
2)Motivation	a) Broad Motivation			2				2
	b) Specific Motivation							
3)Instruction Sequence	a) Initiating a new concept attitude or skill	26		22		22		70
	b) Consolidating a new concept, attitude or skill	20		24		16		60
	c) Adding content to structure	18		106		4		128
	d) Consolidating content	274	56	244		258		832
4)Supervision	a) Active Supervision	698	18	24				740
	b) Passive Supervision	26						26
5) Technical	a) Skilled Technical	10		10				20
	b) Non-Skilled Technical	36		10				46
6)Non-Technical		24		2		4		30
7)Evaluation and Remediation	a) Designing of instruments							
	b) Administration of tests	36		54				90
	c) Objective Marking	14				86		100
	d) Subjective Marking	20		10				30
	e) Interpretation of scores							
	f) Diagnosis & Prescription	34				2		36
	g) Remedial Teaching					62	4	66
8)Guidance and Support		10				24	4	38
9)Hiatus, Interruption and Non-coded		74						74
TOTAL		1,442	74	530		486	8	2,540

TABLE 2 Time Distribution Data for Twenty-five Teachers in Sessions with Volunteer Students, Recorded in Minutes

		CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
1)Planning	a) Broad Planning	76		36		24		136
	b) Specific Planning	162		52		22		236
2)Motivation	a) Broad Motivation							
	b) Specific Motivation							
3)Instruction Sequence	a) Initiating a new concept, attitude or skill	82		116		18		216
	b) Consolidating a new concept, attitude or skill	10		58		30		98
	c) Adding content to structure	76		6		36		118
	d) Consolidating content	300		194		350		844
4)Supervision	a) Active Supervision	306		176		14		496
	b) Passive Supervision							
5) Technical	a) Skilled Technical							
	b) Non-Skilled Technical	70						70
6)Non-Technical		38		6				44
7)Evaluation and Remediation	a) Designing of Instruments							
	b) Administration of tests							
	c) Objective Marking	4				40		44
	d) Subjective Marking					22		22
	e) Interpretation of scores					2		2
	f) Diagnosis & Prescription					14		14
	g) Remedial Teaching					74		74
8)Guidance and Support		2		14		18		34
9)Haltus, Interruption and Non-coded		88		4				92
TOTAL		1,214		662		664		2,540

TABLE 3 Time Distribution Data for Twenty-five Teachers in Sessions without Volunteer Students, Recorded in Percentages of Total Time.

		CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
1)Planning	a) Broad Planning	3.3		.7				4.0
	b) Specific Planning	1.4		.2		.3		1.9
2)Motivation	a) Broad Motivation			.				.1
	b) Specific Motivation							
3)Instruction Sequence	a) Initiating a new concept, attitude or skill	1.0		.9		.9		2.8
	b) Consolidating a new concept, attitude or skill	.7		.9		.6		2.2
	c) Adding content to structure	.7		4.1		.2		5.0
	d) Consolidating content	11.3	2.2	10.0		7.4		30.9
4)Supervision	a) Active Supervision	25.4	.7	.9				27.0
	b) Passive Supervision	1.0						1.0
5) Technical	a) Skilled Technical	.4		2.9				3.3
	b) Non-Skilled Technical	1.4		2.9				4.3
6)Non-Technical		.9		.1		.2		1.2
7)Evaluation and Remediation	a) Designing of Instruments							
	b) Administration of tests	1.4		2.1				3.5
	c) Objective Marking	.6				3.3		3.9
	d) Subjective Marking	.8		.4				1.2
	e) Interpretation of scores							
	f) Diagnosis & Prescription	1.3				.1		1.4
	g) Remedial Teaching					2.4	.2	2.6
8)Guidance and Support		.4				.9	.2	1.5
9)Hiatus, Interruption and Non-coded		2.2						2.2
TOTAL		54.2	2.9	26.2		16.3	.4	100.0

TABLE 4 Time Distribution Data for Twenty-five Teachers in Sessions with Volunteer Students, Recorded in Percentages of Total Time.

		CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
1)Planning	a) Broad Planning	2.9		1.4		.2		4.5
	b) Specific Planning	6.3		2.0		.9		9.2
2)Motivation	a) Broad Motivation							
	b) Specific Motivation							
3)Instruction Sequence	a) Initiating a new concept, attitude or skill	3.2		4.5		.7		8.4
	b) Consolidating a new concept, attitude or skill	.4		2.2		1.1		3.7
	c) Adding content to structure	3.9		.2		1.4		5.5
	d) Consolidating content	13.4		7.6		13.7		34.7
4)Supervision	a) Active Supervision	11.0	1.0	6.9		.5		19.4
	b) Passive Supervision							
5) Technical	a) Skilled Technical							
	b) Non-Skilled Technical	2.8						2.8
6)Non-Technical		1.4	.2					1.6
7)Evaluation and Remediation	a) Designing of instruments							
	b) Administration of tests							
	c) Objective Marking	.2				1.5		1.7
	d) Subjective Marking					.8		.8
	e) Interpretation of scores					.1		.1
	f) Diagnosis & Prescription					.5		.5
	g) Remedial Teaching					2.9		2.9
8)Guidance and Support		.1				.7		.8
9)Haltus, Interruption and Non-coded		3.4						3.4
TOTAL		49.0	1.2	24.8		25.0		100.0

TABLE 5 Time Distribution Data for Twenty-five Students working as Volunteers in the Classrooms Reported in Tables 1 - 4, Recorded in Minutes.

		CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
1)Planning	a) Broad Planning	8		10		2	4	24
	b) Specific Planning	20		2				22
2)Motivation	a) Broad Motivation			4				4
	b) Specific Motivation							
3)Instruction Sequence	a) Initiating a new concept, attitude or skill			8	2			10
	b) Consolidating a new concept, attitude or skill			44	2	42		88
	c) Adding content to structure			48	4	38		90
	d) Consolidating content	76		488	36	444	72	1116
4)Supervision	a) Active Supervision	282		238		10		530
	b) Passive Supervision			36				36
5) Technical	a) Skilled Technical							
	b) Non-Skilled Technical	130		10		2		142
6)Non-Technical		52		8		8	2	70
7)Evaluation and Remediation	a) Designing of instruments			10				10
	b) Administration of tests					66		66
	c) Objective Marking	44		36				80
	d) Subjective Marking							
	e) Interpretation of scores							
	f) Diagnosis & Prescription					2		2
	g) Remedial Teaching					110	10	120
8)Guidance and Support						14		14
9)Hallus, Interruption and Non-coded		112		4				116
TOTAL		724		946	44	738	88	2,540

TABLE 6 Time Distribution Data for Twenty-five Students Working as Volunteers in the Classrooms Pertaining to Tables 1 - 4, Recorded in Percentages of Total Time.

		CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
1)Planning	a) Broad Planning	.3		.4		.1	1.4	2.2
	b) Specific Planning	.8		.1				.9
2)Motivation	a) Broad Motivation			.2				.2
	b) Specific Motivation							
3)Instruction Sequence	a) Initiating a new concept, attitude or skill			.3	.1			.4
	b) Consolidating a new concept, attitude or skill			1.6	.1	1.6		3.3
	c) Adding content to structure			1.7	.2	1.4		3.3
	d) Consolidating content	2.8		19.1	1.4	17.3	2.8	43.4
4)Supervision	a) Active Supervision	11.1		9.3		.3		20.7
	b) Passive Supervision			1.4				1.4
5) Technical	a) Skilled Technical							
	b) Non-Skilled Technical	5.1		.4		.1		5.6
6)Non-Technical		2.0		.3		.3	.1	2.7
7)Evaluation and Remediation	a) Designing of instruments			.4				.4
	b) Administration of tests					2.6		2.6
	c) Objective Marking	1.7		1.4				3.1
	d) Subjective Marking							
	e) Interpretation of scores							
	f) Diagnosis & Prescription					.1		.1
	g) Remedial Teaching					4.3	.3	4.6
8)Guidance and Support						.6		.6
9)Hiatus, Interruption and Non-coded		4.3		.2				4.5
TOTAL		28.1		36.8	1.8	28.7	4.6	100.0

TABLE 7 Time Distribution Data, by Levels, for the Twenty-five Teachers Referred to in Tables 1 - 4, in Periods without Volunteer Students, Reported by Minutes.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	86		18				104
Broad Motivation			2				2
Specific Planning	36		4		8		48
Specific Motivation							
Initiating a concept, attitude or skill	26		22		22		70
Consolidating a new concept, attitude or skill	20		24		16		60
Guidance and Support	10				24	4	38
TOTAL LEVEL 1	168		58		70	4	300
Adding content to structure	18		106		4		128
Diagnosis and Prescription	34				2		36
Active Supervision	698	18	24				740
Designing of Instruments							
Consolidating content	274	56	244		258		832
Remedial Teaching					62	4	66
Interpretation of scores							
TOTAL LEVEL 2	1,024	74	374		326	4	1,802
Subjective Marking	20		10				30
Skilled Technical	10		10				20
Administration of Tests	36		54				90
Passive Supervision	26						26
Objective Marking	14				86		100
Non-skilled Technical	36		10				46
Non-technical	24		2		4		30
TOTAL LEVEL 3	166		86		90		342
GRAND TOTAL	1,358	74	518		486	8	2,444

TABLE 8 Time Distribution Data, by Levels, for the Twenty-five Teachers Referred to in Tables 1 - 4, in Periods with Volunteer Students, Reported by Minutes.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	76		36		24		136
Broad Motivation							
Specific Planning	162		52		22		236
Specific Motivation							
Initiating a concept, attitude or skill	82		116		18		216
Consolidating a new concept, attitude or skill	10		58		30		98
Guidance and Support							
TOTAL LEVEL 1	330		262		94		686
Adding content to structure	76		6		36		118
Diagnosis and Prescription					14		14
Active Supervision	306		176		14		496
Designing of Instruments							
Consolidating content	300		194		350		844
Remedial Teaching					74		74
Interpretation of scores					2		2
TOTAL LEVEL 2	682		376		490		1,548
Subjective Marking					22		22
Skilled Technical							
Administration of Tests							
Passive Supervision							
Objective Marking	4				40		44
Non-skilled Technical	70						70
Non-technical	38		6				44
TOTAL LEVEL 3	112		6		62		180
GRAND TOTAL	1,124		644		646		2,414

TABLE 9 Time Distribution Data, by Levels, for the Twenty-five Teachers Referred to in Tables 1 - 4, in Periods without Volunteer Students, Reported by Percentages of Total Time.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	3.3		.7				4.0
Broad Motivation			.1				.1
Specific Planning	1.4		.2		.3		1.9
Specific Motivation							
Initiating a concept, attitude or skill	1.0		.9		.9		2.8
Consolidating a new concept, attitude or skill	.7		.9		.6		2.2
Guidance and Support	.4				.9	.2	1.5
TOTAL LEVEL 1	6.8		2.8		2.7	.2	12.5
Adding content to structure	.7		4.1		.2		5.0
Diagnosis and Prescription	1.3				.1		1.4
Active Supervision	25.4	.7	.9				27.0
Designing of Instruments							
Consolidating content	11.3	2.2	10.0		7.4		30.9
Remedial Teaching					2.4	.2	2.6
Interpretation of scores							
TOTAL LEVEL 2	38.7	2.9	15.0		10.1	.2	66.9
Subjective Marking	.8		.4				1.2
Skilled Technical	.4		2.9				3.3
Administration of Tests	1.4		2.1				3.5
Passive Supervision	1.0						1.0
Objective Marking	.6				3.3		3.9
Non-skilled Technical	1.4		2.9				4.3
Non-technical	.9		.1		.2		1.2
TOTAL LEVEL 3	6.5		8.4		3.5		18.4
GRAND TOTAL	52.0	2.9	26.2		16.3	.4	97.8

TABLE 12 Time Distribution Data, by Levels, for the Twenty-five Teachers Referred to in Tables 1 - 4, in Periods with Volunteer Students, Reported by Percentages.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	2.9		1.4		.2		4.5
Broad Motivation							
Specific Planning	6.3		2.0		.9		9.2
Specific Motivation							
Initiating a concept, attitude or skill	3.2		4.5		.7		8.4
Consolidating a new concept, attitude or skill	.4		2.2		1.1		3.7
Guidance and Support	.1				.7		.8
TOTAL LEVEL 1	12.9		10.1		3.6		26.6
Adding content to structure	3.9		.2		1.4		5.5
Diagnosis and Prescription					.5		.5
Active Supervision	11.0	1.0	6.9		.5		19.4
Designing of Instruments							
Consolidating content	13.4		7.6		13.7		34.7
Remedial Teaching					2.9		2.9
Interpretation of scores					.1		.1
TOTAL LEVEL 2	28.3	1.0	14.7		19.1		63.1
Subjective Marking					.8		.8
Skilled Technical							
Administration of Tests							
Passive Supervision							
Objective Marking	.2				1.5		1.7
Non-skilled Technical	2.8						2.8
Non-technical	1.4	.2					1.6
TOTAL LEVEL 3	4.4	.2			2.3		6.9
GRAND TOTAL	45.6	1.2	24.8		25.0		96.6

TABLE II Time Distribution Data, by Levels, for Twenty-five Students Working as Volunteers in the Classrooms Pertaining to Tables I - 4, Recorded in Minutes.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	8		10		2	4	24
Broad Motivation			4				4
Specific Planning	20		2				22
Specific Motivation							
Initiating a concept, attitude or skill			8	2			10
Consolidating a new concept, attitude or skill			44	2	42		88
Guidance and Support					14		14
TOTAL LEVEL 1	28		68	4	58	4	162
[illegible] content to structure			48	4	38		90
[illegible] osis and description					2		2
[illegible] e Supervision	282		238		10		530
Designing of Instruments			10				10
Consolidating content	76		488	36	444	72	1116
Remedial Teaching					110	10	120
Interpretation of scores							
TOTAL LEVEL 2	358		784	40	604	82	1,868
Subjective Marking							
Skilled Technical							
Administration of Tests					66		66
Passive Supervision			36				36
Objective Marking	44		36				80
Non-skilled Technical	130		10		2		142
Non-technical	52		8		8	2	70
TOTAL LEVEL 3	226		90		76	2	394
GRAND TOTAL	612		942	44	738	88	2,424

TABLE 12 Time Distribution Data, by Levels, for Twenty-five Students Working as Volunteers in the Classrooms Pertaining to Tables 1 - 4, Recorded as Percentages of Total Time.

	CLASS REGULAR	CLASS SPECIAL	GROUP REGULAR	GROUP SPECIAL	INDIVIDUAL REGULAR	INDIVIDUAL SPECIAL	TOTAL
Broad Planning	.3		.4		.1	1.4	2.2
Broad Motivation			.2				.2
Specific Planning	.8		.1				.9
Specific Motivation							
Initiating a concept, attitude or skill			.3	.1			.4
Consolidating a new concept, attitude or skill			1.6	.1	1.6		3.3
Guidance and Support					.6		.6
TOTAL LEVEL 1	1.1		2.6	.2	2.3	1.4	7.6
Adding content to structure			1.7	.2	1.4		3.3
Diagnosis and Prescription					.1		.1
Active Supervision	11.1		9.3		.3		20.7
Designing of Instruments			.4				.4
Consolidating content	2.8		19.1	1.4	17.3	2.8	43.4
Remedial Teaching					4.3	.3	4.6
Interpretation of scores							
TOTAL LEVEL 2	13.9		30.5	1.6	23.4	3.1	72.5
Subjective Marking							
Skilled Technical							
Administration of Tests					2.6		2.6
Passive Supervision			1.4				1.4
Objective Marking	1.7		1.4				3.1
Non-skilled Technical	5.1		.4		.1		5.6
Non-technical	2.0		.3		.3	.1	2.7
TOTAL LEVEL 3	8.8		3.5		3.0	.1	15.4
GRAND TOTAL	23.8		36.6	1.8	28.7	4.6	95.5

Tables 1 to 12 present the same data in four different forms, first as raw data by minutes and then by percentages of total time (Tables 1 to 6) and then by levels, again by minutes and by percentages (Tables 7 to 12). Tables 1 and 2 show time distribution for the teachers in minutes, first in sessions without volunteers and then in sessions with volunteers. Tables 3 and 4 present the same information in percentage form. Tables 5 and 6 show in minutes and percentages the functions performed by the volunteers. Tables 7 to 12 repeat these data, employing a levels system for analyzing the significance or importance of the time allocations.

The basis for the levels system employed in Tables 7 to 12 is a hierarchy of the functions in the classroom previously established by panels of referees representing classroom teachers, school administrators and teacher educators. An extremely high level of concensus was reached in establishing the hierarchy, and it is therefore contended that while it does not represent an absolute heirarchy, it serves as a useful standard for comparison. In Tables 7 to 12 it will be noted that there are three levels of functions with provision for a total to be shown for each level. Even a casual examination of the functions listed in the three levels will establish in the reader's mind the purpose of allocating the various functions to these levels. Incidentally, the reader may note a discrepancy in the totals between Tables 1 to 6 and Tables 7 to 12. The reason for this is that times allocated to the final category in Tables 1 to 6, entitled Hiatus, Interruption and Non-coded simply could not be categorized in the hierarchy of functions of the classroom because this category is not a function but was included in the original observation instrument merely to account for times that could not be

allocated to the twenty-one actual functions. Therefore, in establishing the levels this category and the data included in it were dropped from the tables.

A comparison of either Tables 1 and 2 (data in minutes) or Tables 3 and 4 (data in percentages) will enable the reader to detect the more important changes in time allocations. For example, the major increases are as follows: specific planning 1.9 to 9.2 per cent; initiating new learning 2.8 to 8.4 per cent; consolidating new concepts 2.2 to 3.7 per cent; and consolidating content 30.9 to 34.7 per cent. Since these are all vital professional functions it can be argued that these are important reallocations of time.

At the same time one can detect some important reductions in time allocations, as for example in active supervision from 27.0 to 19.4 per cent; non-skilled technical 4.3 to 2.8 per cent; administration of tests from 3.5 to 0 per cent; and objective marking from 3.9 to 1.7 per cent. All four of these categories are considered to be non-professional.

The same tables show some interesting changes with respect to the groupings to which teachers devoted their time. For example, the amount of time that the teacher spent with the entire class was reduced from 51.7 to 50.2 per cent and with groups from 26.2 to 24.8 per cent. These reductions in time spent with classes and groups are accounted for in the additional time spent with individuals, which rose from 16.7 to 25.0 per cent.

Tables 5 and 6 show the minutes and percentages of the volunteers' time that was devoted to each of the functions. It will be noted that the largest allocations of student time were in consolidating content (43.4%) and active supervision (20.7%). No other function took up more than 6% of the students'

time, and a general inspection of Table 6 reveals that the volunteers' time was actually allocated to more functions, and more evenly distributed among the functions than was teacher time. It is not surprising to find that the largest consumer of student time, actually approaching half of the total, was in consolidating content. This category includes drill and review and also includes listening to children read; this task is also the largest single consumer of teacher time in many classrooms. Incidentally, it will be noted on Tables 1 to 4 that the two functions of consolidating content and active supervision were also the largest consumers of teacher time. Thus it appears that in allocating tasks to volunteers teachers tend to allocate them to those tasks which consume the greatest amounts of teacher time. When one adds together the percentages of time of the two adults in the classroom one sees even more important increases over the information in Tables 1 and 3.

It is interesting to analyze the distribution of the volunteers' time with respect to the grouping patterns. It is noted that the volunteers spent 28.1 per cent of their time with the class, 38.6 per cent with groups and 33.3 per cent with individuals. A comparison of the figures in Table 1 with the totals in Tables 2 and 5 shows that when the teachers were working alone they spent 594 minutes with individuals, while on occasions when the same teachers had volunteers a total of 1490 minutes of adult time was spent with individuals, this time being composed of 664 minutes of teachers', and 826 minutes of volunteers'time. In other words, when volunteers were present the amount of adult time spent with individuals was approximately tripled, a finding that is roughly comparable to that in the study of the influence of volunteer parents on teachers' time allocations.

In order to determine the importance of the teachers' time allocations the reader should refer to Tables 7 to 12 and in particular to Tables 9 and 10 which show by levels the changes in the teachers' time allocations. Tables 9 and 10 show that when the teacher had a volunteer assistant 26.6 per cent of teacher time was given to level 1 functions, whereas only 12.5 per cent was spent in level 1 in the regular sessions. In other words, in the presence of the volunteer the teacher devoted more than twice as much time to level 1 functions. The total time allocations to level 2 functions was altered only very slightly, dropping from 66.9 per cent to 63.1 per cent when volunteers were present. The largest reduction in time allocation was in level 3 where the percentage of time was reduced from 18.4 per cent to 6.9 per cent.

If one combines the percentages shown in Tables 10 (percentages of teacher time by level when volunteers are present) and Table 12 (percentages of volunteers' time), and then compares this total to the figures for Table 9 (percentages of time when volunteers were not present), one notices some even more dramatic changes with respect to the allocation of adult time in the classroom. This comparison shows that the level 1 functions were increased in time from 12.5 per cent to 34.2 per cent of one person's time. In view of the general concensus that these functions represent the most vital functions of the classroom it can be argued that the efficiency of these classrooms was greatly enhanced in the presence of volunteers. Of course this study does not deal with the question of whether the time spent in various functions was of equal competency. It would be difficult to resolve this question without a carefully designed evaluation which measured comparative

student growth in the parallel situations.

In summary these statistics compiled from observations in thirty classrooms in which volunteers were serving on a continuing basis indicate that during the times when volunteers are present the teacher was spending considerably more time on upper level functions than in normal situations, and was also arranging the allocation of time in such a way that individual students derived almost three times as much individual help. The general conclusion that can be reached from these ovservations is that the work allocations in the classroom were improved, at least in terms of impact on individual attention and on instructional practices.

A SPECIAL ADAPTATION OF THE MODEL

During the 1972-73 school year an opportunity arose for testing out a special adaptation of the model described above. This adaptation enabled us to have a look at a secondary school student volunteer program in which only one subject of the secondary school curriculum had a direct relationship to the project. While assisting the staff at Immaculate Conception School (a bilingual elementary school in St. Catharines) to develop a volunteer program the problem arose of finding sufficient volunteers who were reasonably proficient in Oral French. About the same time we were made aware of the concern of many secondary school teachers with respect to practical opportunities for secondary school students to use their Oral French in everyday situations. This observation by the teachers was very similar to that expressed by federal authorities, namely that a major problem of bilingualism is that the learner has inadequate opportunities to apply the

second language in meaningful contexts outside of the instructional setting.

With these two needs from the two schools in mind, it appeared to be a golden opportunity to explore the relationship of a secondary school volunteer program in one subject area to related needs in an elementary school. We found that both the elementary teachers in the bilingual program and the teachers of Oral French in Denis Morris High School were enthusiastic about a program providing for about fifty secondary school Oral French students to serve for about one hour per week in the bilingual elementary program with particular emphasis on the primary grades and on opportunities for the student to employ Oral French.

Ideal cooperation in this adaptation was received from both the elementary and the secondary school. A feeling of innovation prevailed, suggesting that some of the success of the program may have in fact been the result of a halo effect. The secondary school students quickly learned to perform specific learning tasks at the primary level, and a series of observations and discussions indicated that they were employing their Oral French skills over 80 per cent of the time in which they were in the elementary classrooms.

Evaluations of this adaptation were conducted mainly in discussions with the students themselves and with teachers at both the elementary and the secondary schools. No formal evaluation of the attitudes of any of the groups was required, because obvious enthusiasm for the program was reflected on every visit. In fact all three groups concerned frequently requested that we increase the number of students involved. The elementary teachers wish to continue with the program next year, and so many students of the

secondary school wished to participate that a major expansion of the program will have to be planned if their wishes are to be accommodated. The students themselves stated that their Oral French performance was greatly improved, but they also commented on many other values that they also saw in the program, most of which are similar to those indicated by the students in Halton County and reported on in the previous sections. The secondary school teachers were not asked to provide information on differential growth patterns in Oral French for the participants, but in every discussion on the subject the teachers commented on the very favourable Oral French growth of the students concerned in the program. It seems probable that most of the students selected during the initial year of the adaptation were students who were already reasonably successful in their Oral French studies, so it would have been invalid to have attempted to compare their growth with that of average or typical students.

This adaptation of the secondary school model appeared from every point of view to be advantageous to all parties concerned -- to the secondary school students who were given expanded opportunities to use their Oral French in meaningful and secure contexts; to the elementary school teacher who was able to assign numerous learning tasks to the volunteer students; and to the elementary school students who received considerably more individual attention and assistance with their Oral French. One surprising outcome of the study was that we received no complaints in the elementary school about the quality of the Oral French provided by the secondary school students. If there was any deficiency in the Oral French skills of the secondary school student they were more than compensated for, at least in

the eyes of the elementary teacher, by the additional help that they provided. By working with very young children in the elementary school the secondary school student apparently felt adequately secure to proceed in the second language without undue concern about weaknesses in vocabulary, pronounciation, etc. The fact that most of the communication with young children was in arithmetic instruction and Oral French reading perhaps accounts for the lack of problems in vocabulary. In any case the program was considered beneficial by all concerned.

It can be argued that this Oral French adaptation of the secondary school model is a natural one which might not be as readily applied to other subject areas. There is no doubt much truth in this argument. However, the adaptation is one which many other secondary schools might capitalize on because the problem in Oral French usage appears to be a general one in the culture. The need in other subject areas may not be as profound and therefore might not require so intensive a working relationship between the two levels. It seems probably that if the level of commitment were adequately sufficent many other departments of the secondary school could find opportunities for application of particular lessons or units in elementary school programs, even if they did not reach the dimensions documented in this special adaptation.

Chapter 2

The Role of Adult Volunteers in a Differentiated Staffing Plan

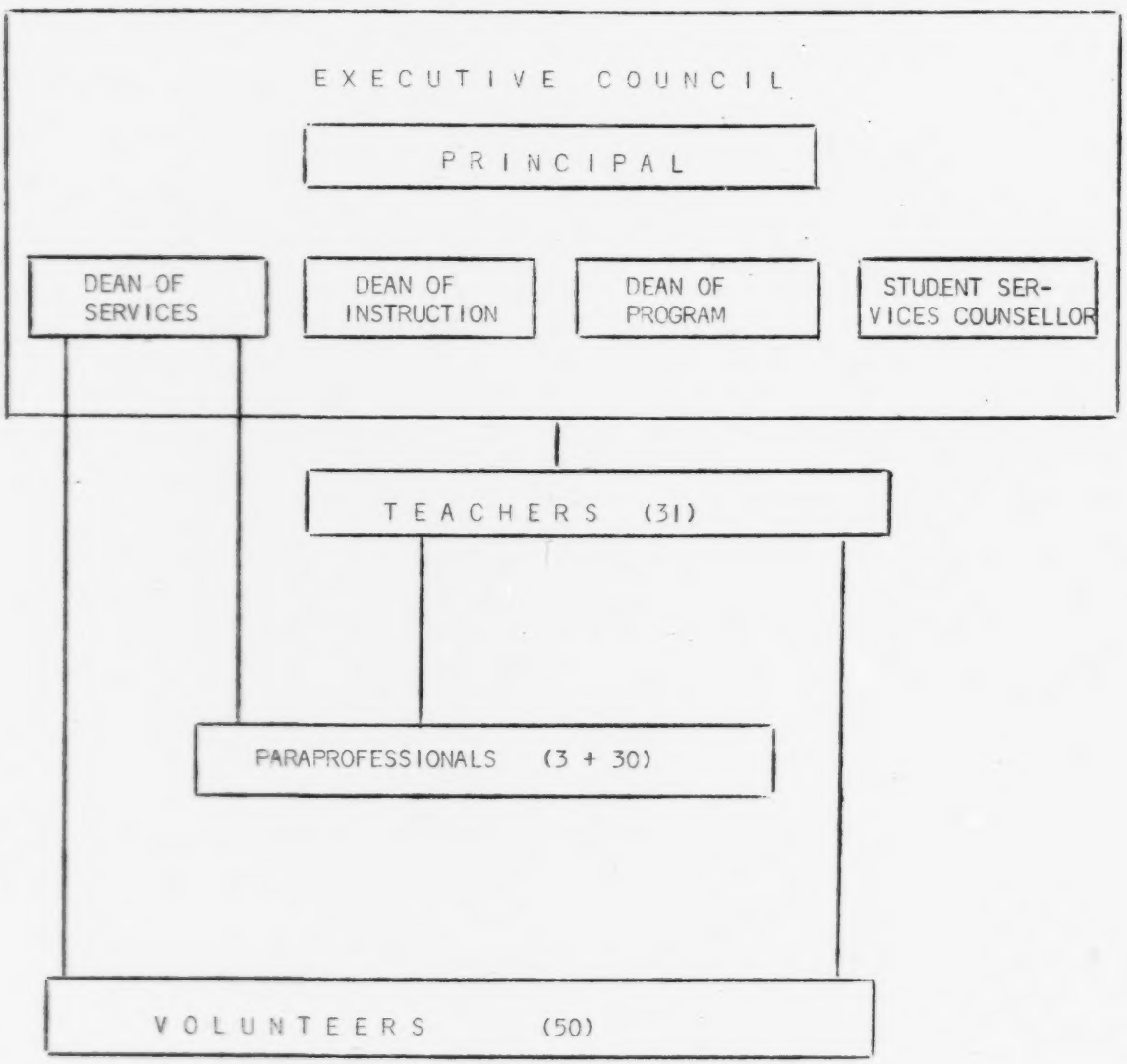
As stated in the introduction, this program, entitled Program E, was designed to study the role of volunteer activities in a school in which a modified differentiated staffing plan was in effect. The major outcome of this study is the description of the respective roles or functions performed by the various levels of staffing including volunteers.

This study was conducted at St. Thomas More Comprehensive School, a secondary school operating in Hamilton under the Wentworth County Roman Catholic Separate School Board. This school was built and opened during the past two years, and from its beginning has employed a modified differentiated staffing plan and has also incorporated a number of major innovations in a building which is designed to provide for a maximum of team teaching in an open space design.

On page 57 a diagram is presented to show the levels of staffing at St. Thomas More along with the lines of authority and relationships existing among the five levels. It will be noted that the principal, three deans, and a student services counsellor comprise the executive council of the school. The teaching staff, numbering thirty-one, are responsible to the executive council. In staffing the school a number of teachers' salaries were deliberately traded off for a sum of money which would enable the school to engage paraprofessionals. During the past year there were three permanent paraprofessionals and approximately thirty other people who were employed as paraprofessionals on a part-time basis. As shown in the diagram the

ST. THOMAS MORE COMPREHENSIVE SCHOOL

DIFFERENTIATED STAFFING DESIGN



paraprofessionals are responsible to the Dean of Services and to the teaching staff.

The fifth level of staffing involves volunteers. During the past year approximately fifty people served as volunteers in the school on a basis sufficiently extensive or regular to be counted in the volunteer corps. In addition, a large number of persons served on an individual or temporary basis. As shown in the diagram the volunteers, like the paraprofessionals, are responsible jointly to the Dean of Services and the teaching staff. In practice the Dean of Services has assumed the responsibility of the organization of the programs for paraprofessionals and volunteers and has given leadership in the recruitment and assignment of the volunteers and paraprofessionals. Aside from the ongoing aspects of administration of these two groups of additional personnel carried on by the Dean of Services, the teaching staff assumes the major responsibility for the allocation of functions performed by the paraprofessionals and volunteers.

During the past year an additional element was employed at the level of the volunteer corps. As a result of the author's involvement at Mohawk College in the study and training of a group of students who wished to become community services leaders, it became possible to assign some of these students to schools or school systems to assist in the development of volunteer and other community programs. One of the persons so assigned was Mr. Maurice Willock, who served his practical work as an organizer of the volunteer corps at St. Thomas More. Mr. Willock worked under the direction of the author and the Dean of Services in the school and performed functions such as recruiting volunteers, the identifying of students with special

needs, the organizing of tasks identified or prescribed by the teaching staff, the assigning of related functions or tasks to volunteers, and the overall supervision of a number of volunteers whose activities were mainly in remedial instruction. While Mr. Willock made an important contribution to this aspect of the volunteer program, one should not assume that the presence of an outside coordinator is essential to the program. Had he not been present, the Dean of Services would have included his functions in his own list of responsibilities within the school. In that respect then the additional help was merely an extension of some functions of the Dean of Services. Because the workload of the Dean of Services was particularly heavy during the year under study, the services of the additional officer on a part-time basis was particularly helpful, but should not be regarded as an essential ingredient of such a plan.

A brief description of the physical organization of the school may be useful to the reader. There are approximately 800 students at St. Thomas More. The main learning areas are a very large open space surrounding a learning resource centre, and a smaller open space on another floor. The larger open space is used mainly for instruction in mathematics, English, French, history, and geography. The smaller open space is designed as a very large science laboratory. Other subjects such as industrial arts, home economics, physical education, music, etc. are conducted in separate smaller units designed in keeping with the needs of the subject concerned.

It is important to note that a very large amount of the instruction is conducted in various forms of team teaching units. In general, a part of the open space area is designated to a particular subject, and the teachers

assigned to that subject work as a team in that area. While team leadership is evident within each subject area, the functions of leadership tend to be shared by members of the particular team. Individual staff members may work at different times with very large groups, class groups, small groups, and individuals. In some subjects, particularly mathematics, the students progress at more or less their own rate, and as a result a great deal of the instruction takes the form of individual assistance when problems arise. On the other hand, some subject areas are conducted mainly on a class basis with the entire class receiving more or less the same instruction at the same time. In classes in French instruction, for example, it is common practice for the entire class to take the same instruction. A visit to the large open area would establish that a wide variety of teaching practices and group arrangements are in evidence at any point in time.

The two main observers in the current project, the author and Dr. Robert Kenzie, were from time to time asked to observe or comment on general aspects of the learning environment in the school, in addition to the documentation of the functions described later in this chapter, even though the general observations would not ordinarily be considered a part of the observer's functions. No doubt the request for such observations were in recognition of the objective nature of such observations, and were motivated by the fact that the program in the school was new. The most apparent aspect of the learning environment in the school is related to the very high degree of attention to the individual needs and progress of the students. A contrast between the most individualized aspects of the open area and the most class-orientated activities has been provided in the previous paragraphs. In the

special subject areas similar patterns, with a high degree of flexibility, can be observed. Perhaps the most interesting application of individual attention is provided in the home economics area, where the students appeared to be constantly engaged in practical tasks, with the teacher spending almost all her time on individual teaching. In fact in this environment no group teaching was observed. The high level of involvement of the students both here and in other areas in practical tasks is one of the highlights of the program. Accompanying the individual tasks there appears at times to be some apparently irrelevant student behavior. However the two observers on reflecting on such behavior concluded that the amount of apparently wasted time is no greater than and perhaps not as great as with more traditional teaching procedures, particularly when one recognizes that it is not possible to tell whether all students are in fact fully engrossed in the lesson in large-group teaching situations. Another noteworthy feature of the organization of the school was the use of periods in the day which appeared to be totally free of instruction, and in which students could move about, plan work with other students or teachers, or engage in recreational activities. Considerable use is made of the public address system in the school to maintain communication concerning policies, attendance, changes in program, etc. There is a great deal of freedom of movement within the school, and a visitor is likely to encounter small groups of students in hallways and empty rooms at almost any time of the day. The students seem to be both happy and involved in the program of the school, and from casual observations and comments one concludes that the students are proud of their school.

RECRUITMENT AND ASSIGNMENT OF VOLUNTEERS

Because the author's interest was mainly in the question of the function of volunteers as a component of the total array of functions of the school, his major focus was on the volunteers themselves. Therefore it became a natural activity of the author in the school to assist the school with the development and extension of its volunteer program. The school had already developed a program in which a number of volunteers were working on a continuous and fairly high level basis within the school. In addition to this well established corps of volunteers, the author, accompanied by Mr. Willock, assisted in the recruitment and assigning of an additional corps of volunteers.

Some distinction between the tasks performed by these two groups of volunteers was evident. The corps recruited by the school attended on a more regular basis and with an apparently higher level of commitment, and tended to be assigned on a more regular basis to individual staff members, with whom they worked, often in cooperation with the instructional activities of the teacher or the learning area in question. A typical example would be the services in the French program provided by volunteers who were highly efficient in Oral French and were thus able to reinforce the instruction provided by the teacher. The second corps of volunteers, with which the author and Mr. Willock were engaged, were recruited mainly to help out with a wide range of remedial problems in the school. In general this corps of volunteers served for a shorter total period of time, and in all represented a smaller total volunteer contribution than did the original corps.

While the original corps of volunteers presented relatively few problems

with respect to regularity of attendance, level of commitment, competency, etc., much less success was achieved with the second corps recruited to assist with remedial instruction. We had considerable difficulty in recruiting an adequate number of volunteers to serve in this activity, and it required much work on the part of those in charge to maintain this corps.

A number of reasons may account for the difficulty in establishing and maintaining a corps of volunteers to help with the remedial program in a secondary school. It may be that in this school the most highly committed volunteers had already been recruited into the regular program. A more probable explanation of the difficulty was in the volunteer's perception of the work to be done. Even though we assured them that the tasks we would be giving them would be relatively easy for them to carry out, the fact that secondary school mathematics was a major area for such remedial work no doubt frightened away many of the adults whom we contacted. A more fruitful approach to the recruitment of volunteers to assist with remedial programs in secondary schools might be to recruit volunteers for more general activities and then to gradually introduce them to specific low-level remedial tasks.

In planning for the services of the volunteers, those in charge invited teachers to identify pupils with learning difficulties, particularly in the mathematics area. We then worked with the teachers to determine methods of identifying the specific difficulties that students were having. We started with the simple analysis of problems in multiplication, addition, division, subtraction, etc. Using flash cards it was relatively easy for volunteers to help students identify such low-level difficulties and to

prescribe practices which would alleviate these problems. These included drill sessions both at home and with the volunteers. Next, the staff identified particular facets of the mathematics program on which students could be tested, given remedial instruction, and provided with drill. These involved mainly operations ordinarily taught in elementary school and considered essential to efficient mathematical operation in the secondary school. The remedial program in mathematics was limited to this range of remedial practices, mainly as a result of our failure to recruit as large a volunteer corps as would have been essential to have resolved adequately these remedial needs and then to extend such practices to higher levels and to other subject areas.

INTERACTION AMONG TEACHERS, PARAPROFESSIONALS AND VOLUNTEERS

The most noteable feature of the interaction among the three levels of instructional staff was the relatively small amount of time of that such interaction seemed to require. Many of the paraprofessionals were university students who had considerable competency in the subject area in which they were working. Similarily, the volunteers obviously had a firm grasp of what they were expected to do from day to day. As a result both groups received minimal guidance from the teacher in charge. In tabulating the activities of these groups the amount of time spent in interaction was included under the headings for planning on the observation sheets. In most cases it involved figures under 10 per cent of the time, and was only one component in the total amount of time allocated to planning, with the more significant amount of such time being specific planning with pupils.

The quality of interaction among the three groups could be described as being friendly, efficient and democratic. There was considerable sharing by all parties involved with respect to the ideas presented and accepted. The location for such interaction was not limited to the classroom. In fact the paraprofessionals and the volunteers appeared to use the staff room as much as did the teachers. In the science area the paraprofessional had a desk in the science office. In general the interaction among the groups was related to explanations of specific procedures to be followed in supervising, instructing or remediating student activities. It was obvious that all three groups were engaged a considerable amount of the time in activities which have been categorized as instruction and supervision.

TEACHER EVALUATION OF PARAPROFESSIONALS AND VOLUNTEERS

A number of teachers were interviewed concerning their impressions of the competency and contributions of the paraprofessionals and volunteers. On the basis of the information derived in these interviews, one can conclude that the teachers in general were satisfied with the contributions of both of these levels of additional assistance. They reported that both groups of helpers made a significant contribution to the school program this year. In the case of both kinds of helpers the staff expressed the view that more such persons could be profitably engaged in the school and that this would be an improvement in the program. They felt that some selection criteria should be established for the allocation of volunteers.

Some of the paraprofessionals and some of the volunteers appeared to be highly qualified for the kinds of tasks that they were assigned. The university students, of course, brought a particularly strong background in

certain subjects into the program. One of the full-time paraprofessionals was highly qualified in chemistry, and plans to go into teaching, and as a result seemed to be extremely useful in the science laboratory both in such technical tasks as maintaining equipment and in the individual teaching of students working on individual lab assignments. Similarly some of the volunteers had particularly strong backgrounds in some of the subject areas in which they were working; particular reference is made to the home economics program and the Oral French program in this respect.

The author had numerous opportunities for gathering informal information about the teachers' evaluations of their additional helpers, and rarely were any comments made of a negative or critical nature. It was obvious that the teachers could identify sufficient individual needs in their teaching areas to keep all of the helpers profitably engaged most of the time.

TIME DISTRIBUTION BY THE FIVE LEVELS OF STAFF

The predominant activity of the project team involved the collecting of data for making a comparative analysis of the time distribution by function for each of the five levels of staffing identified above. For the purpose of collecting data the Hedges' Taxonomy of Classroom Functions was employed. Most of the data could be collected by direct observation; in fact all the data for teachers, paraprofessionals and volunteers were collected by this means. Most of the data for the deans and the principal were derived from an analysis of the work schedules of the persons concerned. This analysis was verified by an interview with the individual concerned. The taxonomy

provides for twenty-one functions. However because it was difficult to distinguish among various functions in such categories as motivation, planning and instruction, particularly from interview data, it was decided to classify the time distribution by broad categories of functions rather than by individual functions. Thus all the time was categorized under the following broad categories: planning; motivation; instruction; guidance and support; evaluation; supervision; and technical and non-technical activities.

The reader is reminded that the taxonomy of classroom functions employed in the study, and the accompanying manual are found in the appendix of this report. An examination of the 21 function in the taxonomy will enable the reader to understand the logic of the seven broad categories in which these functions have been grouped for the purposes of the present report.

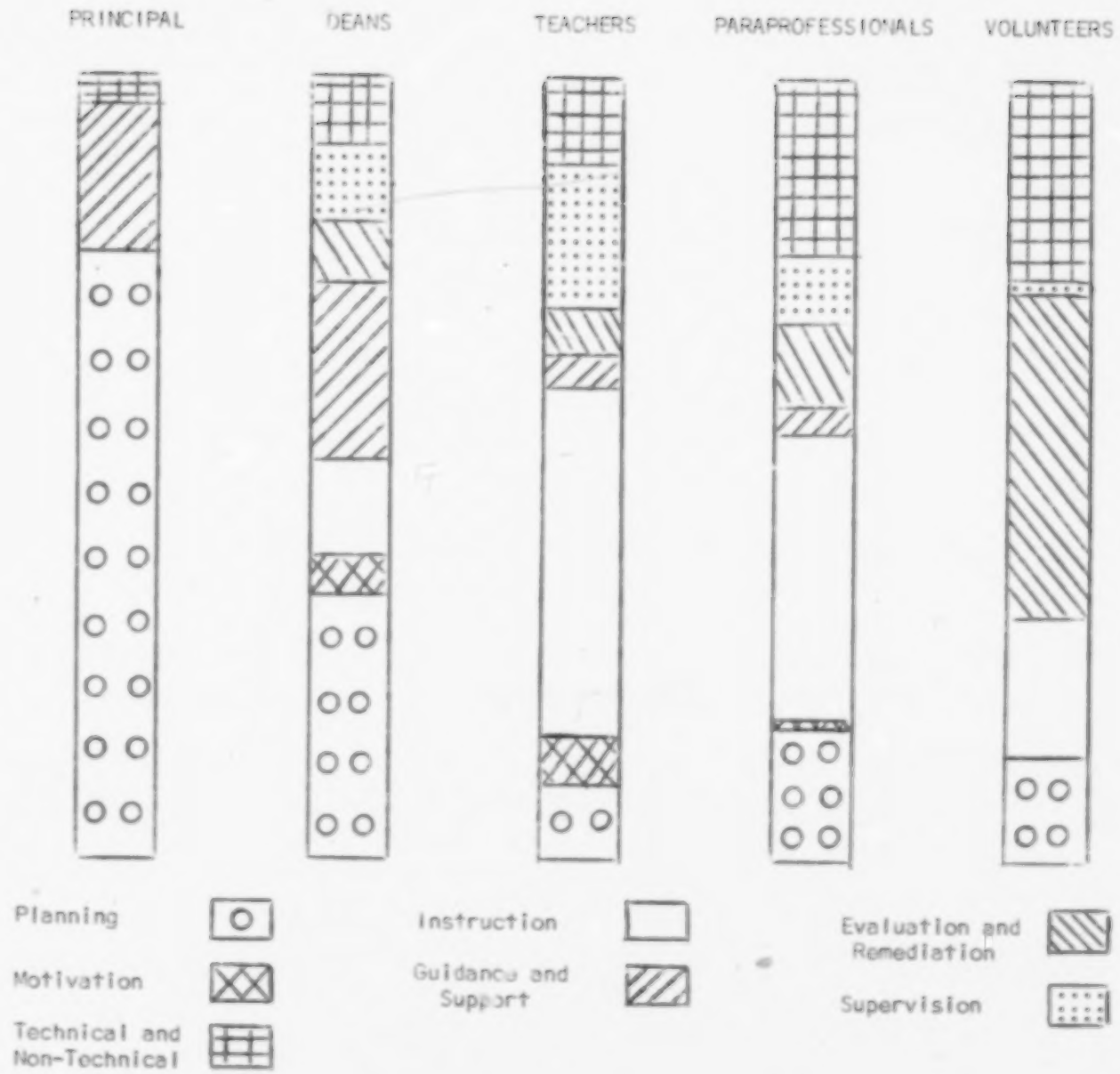
A summary of the findings is presented in Tables 13 and 14, first in percentage form and then in a bar graph which shows pictorially the comparisons in time distribution for the five levels of staffing.

It should be pointed out that there are a number of weaknesses in the process of collecting the data. However, most of these do not seriously affect the information provided in the tables. Because of the large number of people involved it was not possible to observe all of the people in each level, or in all cases to observe for identical periods of time. However, no deliberate selection was made within each level, and it is believed that those not observed were similar in their time allocations to those observed in the study. As in any statistical procedure which groups together raw data some information is lost. For example, some individuals spent almost

TABLE 13 Mean Percentages of Time Devoted to Various Functions by Five Levels of Staff.

	Principal	Deans	Teachers	Paraprofessional	Volunteers
Planning	79	34	7	14	12
Motivation	0	3	5	1	0
Instruction	0	12	47	39	19
Guidance and Support	19	26	3	3	0
Evaluation and Remediation	0	6	5	11	41
Supervision	0	9	20	8	1
Technical and Non-Technical	2	10	13	24	27
	100	100	100	100	100

TABLE 14 Bar Graph Showing Time Devoted to Various Functions by the Five Levels of Staff.



all their time in one or two functions, but this fact is not apparent in the totals for the respective levels. This loss of information is particularly critical with the volunteers. It was noted that some volunteers devoted almost all of their time to instruction, others to remedial teaching, others to technical tasks, etc. However, in the tables it appears as if the volunteers may each have performed a wide range of functions.

A comparative analysis of the summaries of Tables 13 and 14 provides some interesting distinctions in the time distribution of the various levels of staffing. It is interesting to observe that all five levels spent important amounts of time in planning, with the principal and deans using the greatest relative proportions of their time for this function. It is rather surprising to note that both the paraprofessionals and the volunteers spent more time on specific planning with students than did teachers. This fact in part may be accounted for by the probability that much of the teacher's planning was conducted outside of classroom hours.

A most significant finding was that teachers and paraprofessionals spent 47 per cent and 39 per cent respectively of their time on instruction. These figures for both groups exceed by large amounts the general findings about the time distribution of teachers and of paraprofessionals. For example, Hillsum (1972) reports that teachers spend only 26 per cent of their time on instruction. The author interprets these figures as being products both of the team organization and individualized instruction in the school and of the effect of having paraprofessional and volunteers performing some of the other functions and in particular the technical functions. Probably the evidence of teachers spending almost half their time on in-

struction represents the most important effect of the program and also represents an important contribution of the paraprofessionals and volunteers to the overall program of the school.

It is noted that relatively little responsibility for motivation was given to the paraprofessionals and to the volunteers. This situation probably indicates that the tasks given to these groups of people by teachers were already highly identified by the teachers, and required little deliberate motivation. Alternately, it may indicate a lack of understanding of motivation by the assistants.

Surprisingly enough the paraprofessionals and volunteers performed relatively little of the supervisory work in the school. The author has found that in most elementary programs volunteers are given large amounts of supervisory responsibility. Obviously in the existing program most of the supervision is retained by the teachers. Apparently this situation relates to the age levels of the students concerned.

It can be expected that both the paraprofessionals and the volunteers would be engaged in fairly large amounts of technical and non-technical work in the school. It was found that paraprofessionals spent 17 per cent of their time and volunteers 27 per cent in the broad function described as technical and non-technical. However, one interesting aspect of this distribution was noted, namely that in the non-technical area no volunteer time was recorded, a fact which suggests that the paraprofessionals perform many of the lowest level jobs in the classroom, most of which are related to what might ordinarily be called household chores such as distributing and collecting materials, moving furniture, etc. The avoidance by the teachers of non-technical assignments for volunteers is healthy evidence of

the fact that teachers sense that volunteers must be given tasks which are reasonably challenging if they are to be both motivated and rewarded for such activities. The absence of any evidence of non-technical work by volunteers runs counter to the initial notion stated by many teachers, namely that volunteers should perform mainly the housework functions of the classroom.

Because the second corps of volunteers referred to above spent most of their time in identifying and assessing particular remedial problems of students and then of providing remedial instructions, it is not surprising to note that 41 per cent of the volunteers' time was spent in evaluation and remediation. No doubt this figure is unusually high for a volunteer program, and represents the specific assignment to remedial work to a degree not likely to be seen where such a focus in not provided.

It is noted that considerable guidance and support was given by the principal and the deans including the student services counsellor. On seeing the figures in the table these individuals contended that they thought that the figures were actually low and that in a typical week they would be spending more than the percentages shown in guidance and support activities.

It is noted that the deans performed a number of functions in addition to planning and guidance and support, and according to the data spent over 20 per cent of their time in instruction and supervision.

Probably the most significant observations that can be taken from the summaries are as follows:

1. One effect of the additional levels of staffing was that teachers were able to approximately double the percentage of their time over what

teachers ordinarily give to instruction.

2. The percentage of the teacher's time on instruction, when accompanied by the percentages of instructional time by paraprofessionals and volunteers, indicates that in this school a vastly higher proportion of adult time is given to instruction than in most situations. Obviously this means that far more of the instructional services of the adults were given to meeting individual needs of students.

3. The reasonably large percentages of time given to technical and non-technical functions by both the paraprofessionals and the volunteers indicate that teachers were relieved of many of the non-professional activities of the school, a fact which accounts in part for the sharp increase in the percentage of time spent on instruction.

4. The activities of four of the groups in evaluation and remediation indicate that this function in the school was performed to a much higher extent than in typical programs. The presence of the volunteer corps in particular markedly increased the amount of remedial instruction.

5. A remarkable amount of time was spent on planning, and included both broad planning and specific planning with students. One suspects that the fact that the program of the school is new accounts in part for the large allocations of time to planning activities.

It would be useful to have comparative data for these teachers if paraprofessionals and volunteers were not present. While such a comparison might not be possible within this school, it should be possible to find a control school using open space and team teaching, with such school serving as a control for such comparison.

A further study which could be conducted within the school under the existing arangements would be a comparison of the time allocations of the teachers in time periods when paraprofessionals and/or volunteers were present in their area with allocations when neither of these two levels of additional staffing was present. For example, it would be interesting to determine whether teachers are able to sustain the allocation of their time in ways which enable them to spend almost half their time in instructional tasks.

The present study is not able to determine the degree to which the allocation of time by the present staff was a function of the individualized program, team teaching approach and open space areas, or of the additional help provided by the paraprofessionals and volunteers. This question could be answered if a study were made of the time allocations of teachers within the school who make use of these extra helpers as contrasted with teachers who might agree to avoid using such help for the period of the study.

An obvious question concerning the information gathered in this study has to do with whether the data would be replicated in a similar modified plan for differentiation of staff in other schools. Any prediction on this question must be tempered by the fact that the differentiated staffing plan, the team teaching organization, the individualized approach to instruction, and the open space area, probably all contributed to the greater amounts of time devoted to instruction. In order to produce the effects documented in this study it is probable that these components would be required. Nevertheless it seems probable, on inspection of the functions performed by the paraprofessionals and volunteers, that many of these

could be performed within more traditional secondary school organizational plans, and such activities would in turn be expected to produce certain changes in the time allocations of teachers. Earlier studies on the effects of volunteers (Hedges, 1972) and of paraprofessionals (Bay City, Michigan, 1960) show that at the elementary school level additional help has a marked effect on the allocation of teacher's time, with greatly increased time devoted to instruction. In view of the data collected in this study it seems probable that the findings in traditional elementary school programs could be at least in part replicated at the secondary schoo level.

Because the present project is part of a long-term study of volunteer help, a few additional comments about volunteers at St. Thomas More are in order. At this school in addition to the activities of volunteers documented in this study, numerous general activities more or less unrelated to the classroom or to instruction were also performed by highly committed and competent volunteers. For example, some aspects of the recreational and lunch programs are handled by volunteers. Many office procedures were supported by volunteer help. Finally, one of the largest and most interesting activities of volunteers was observed during June 1973 when a team of interested volunteers assumed almost the entire responsibility for arranging the numerous details of the time-table for the next school year. This highly complex, frustrating, and time-consuming job was done so competently that the principal has reported to the author that the only additional work that was required on his part was a minor adjustment of a number of periods caused by special considerations not generally known at the time the time-table was set up by the volunteers.

It can be concluded that the volunteer program at St. Thomas More is an important part of the school's program, not only as it relates to the instruction and general organization of the school but also in terms of continuing community support. It will be interesting to observe the ways in which the staff is able to extend and apply the information learned this year, and particularly to broaden the corps of volunteers who made it possible to enhance the instructional program of the school.

CHAPTER 3

Using Volunteers in an Individualized Reading Program

The third program in the present project, entitled Program F, is based on a plan for increasing the amount of volunteer help in an individualized reading program in order that the level of readiness of the student may become the basis for new instruction in reading. A deliberate aspect of such a plan is a procedure developed and organized by the teachers concerned for vertical integration of the students across the existing grade structures.

Because this program was intended to be an extension of an existing program, Victoria Public School in St. Catharines (Lincoln County Board of Education) was selected as the school in which to develop it. Victoria School already had a highly developed volunteer program; in fact one of the classrooms at Victoria School was the locale for the radical proposal dealing with the reorganization of teacher time in the report entitled Using Volunteers in Schools.

Initially, the teachers of the kindergarten through grade 3 were to be involved in the program. The vertical reorganization scheme was to be left in the hands of the teachers to develop in order that we could find out whether the additional volunteer manpower could in fact be deployed adequately by the staff to enable them to get the time required for planning the reorganization and for meeting the individual needs of students within the reorganizational plan selected. Thus, the additional help was intended to meet two needs: planning time for teaching staff, and additional help to individual students under the teacher's direction.

For a number of reasons the greatest amount of additional volunteer help was eventually devoted to the kindergarten and grade one classrooms in the school. One reason for this outcome was that the teachers concerned had already experienced volunteer programs to some degree and appeared to be secure about proceeding with them. There also seemed to be a higher level of commitment to the plan by these teachers. Some of the other teachers appeared to be insecure about other adults in the classroom, or may not have been able to give the additional time required initially to reorganize their own work so that they could capitalize on the additional help. The previous program of the school had apparently explored almost completely the available parental assistants in the school community, and it may have been that earlier loyalties to certain teachers influenced the availability of volunteers for some of the other teachers.

In all, approximately twenty-five parent volunteers were engaged in a regular basis in the program, each working approximately one-half day per week in the school. Of this group twenty-one were identified basically with the kindergarten classroom and the two grade one classrooms. In general they worked during the mornings, concentrating their time on the reading program. In addition some of them assisted with the arithmetic program. From teacher interviews it was determined that the volunteers were regular in attendance, dependable in the assignments given, and capable of carrying out the teacher's instructions in the work assigned to them. In addition to the regular corps a number of other parents who had other duties that restricted their involvement frequently visited when they had additional time and were thus able to meet various long-term classroom needs which could be postponed until the time when they were available.

As a result of the planning time made available to them the teachers developed their own plan for vertical reorganization of the pupils in the primary division. This involved mainly cross-grouping among the various classrooms, and was limited almost exclusively to the reading program. The first children to be cross-grouped were those who obviously required skills at a grade level lower than the grade in which they were registered. This need of course was an outcome of the school's plan for continuous progress of the youngsters. A typical example of this procedure was the placing of a number of grade one children in the readiness units of the kindergarten for particular periods of time.

The second aspect of the vertical integration involved sending to a higher grade level a number of children who obviously were ahead of the various groups in their own classroom and who were sent on a trial basis to the higher reading level. Some of them were found to be not ready for this program and were returned to the basic group from which they had come.

The third dimension of the vertical grouping was the identification of pupils who could be sent to a younger or older classroom for particular skills such as vocabulary, phonics, etc. These pupils were fitted into existing programs at the other grade level. Apparently few if any other special provisions had to be made. This procedure typified the work-saving aspect of the plan for vertical integration, in view of the fact that neither teacher involved had to prepare additional work for the pupils concerned.

These types of transfer of pupils in the reading program continued throughout the year. Obviously the procedures required a flexible plan of reorganization, opportunities for the teacher to identify particular needs of individual children, and opportunities to discuss progress on a continuing basis with the other teachers. In some respects the organization

plan actually reduced teacher work because it provided for a more efficient grouping of the children so that teachers did not have to prepare lessons for additional small groups at the two extremes in the range of reading levels within each classroom.

The main activities of the teachers during the reading period each morning involved diagnosing reading difficulties, determining levels of readiness for reading and teaching new skills to individuals or small groups of children. In addition, the teachers spent some time each day listening to individual children read. However, the bulk of the oral reading was heard by the parents. In fact, this represented by far the largest use of parent time, and constituted the most important contribution of the parent to the program. The reading assignment for each student each day was recorded in an individual progress book for each pupil. In this book the parent also recorded observations concerning the child's progress and any difficulties encountered. In this way the teacher provided not only for special directions to assist the volunteer, but also was assured of a continuing vehicle for communication about and monitoring of the progress of the individual child. The author's observations of this procedure leads him to believe that this is an almost ideal procedure for monitoring pupil progress and determining the level of readiness of the individual learner. In addition, it provides on a continuing basis an ideal form of communication among all the parties involved.

In structured interviews teachers were asked to identify the specific tasks carried out by volunteers, particularly as they related to the individualized reading program. In order of the amount of time given by

parents to the program, the following activities predominate: listening to individual children reading orally; asking individual children questions about the story they have read; practising word drills; introducing new words to individual pupils; working with individual children using specific training materials; marking pupils' work; reading to groups of children; preparing teacher-directed materials such as word lists, stencils, etc.; and testing individual children on word recognition, alphabet knowledge, etc. In addition, certain parents printed stories dictated by the children who were not ready to print their own stories. The volunteers also performed many other tasks of the classroom which were more or less unrelated to the individualized reading program. These activities included drilling in mathematics, remedial instruction in mathematics, marking pupils' work, assisting with the housework aspects of the classroom, cutting stencils, entering information on various reports, helping children with clothing, working on bulletin boards, etc.

The teachers reported a number of important changes in their own work. Most important to the teachers was the fact that time was available to them for planning together the reorganizational and diagnostic aspects of the program. They reported that much more time than in previous years was given to discussing programs, initiating and administrating program changes, assessing the growth of individual students and evaluating the results of their activities and making revisions as required. In the process they became much more aware of the individual needs and progress of the pupils. This benefit accrued not only from their own closer working relationship with individual students but also from the constant communication in the

individual pupil's progress book. It was evident that the observations of parents contributed greatly to these insights about individual students. Another benefit identified by the teachers was that much more time was directed to initiating new learning and much less to what the teacher called routine listening to children read. The reorganization of the teachers' activities resulted in each session with the individual child having a deliberate purpose, usually related to diagnosing readiness or problems, or initiating specific new reading skills. Another advantage pointed out by the teachers was that children who needed special help were not only identified sooner but could receive on a one-to-one basis with the teacher or a volunteer a much longer period without interruption by other pupils. The teachers noted that the amount of adult time spent with each individual was multiplied several times.

A significant finding in the view of the author was that the teachers were able to initiate, maintain and administer both the reorganizational change and the volunteer program with a minimum of outside help. During the first year in this school, when the volunteer program was first organized, the project team contributed several hours weekly to recruiting, training, maintaining, adapting and supervising the volunteer program, in addition to giving the teacher concerned instruction in the reorganization of her classroom. During the current program the outside help was deliberately reduced in order to determine whether the teachers could themselves maintain the volunteer program and at the same time initiate and administer the reorganizational plan which they had conceived. The success that the kindergarten and grade one teachers in particular had in carrying out this program is a tribute to their commitment both to the individualized reading

program and to the volunteer activities in the school, and is evidence that with a measure of support either from outside team or from their principal the teachers of primary sections in other schools would no doubt be able to repeat the experience of these teachers in order to meet individualized reading needs.

At the same time, the reader should recognize that some of the teachers had difficulties in maintaining a volunteer program and of becoming involved to a high degree in the plan for vertical integration of their classes. While one is tempted to attribute these difficulties to what may be perceived as a limited pool of volunteer help, a more probable explanation has to do with teacher security and the commitment and assistance to the program of educational leaders outside the classroom. It probably is unrealistic to expect that a division of a school can maintain both the volunteer program and a major organization program without substantial help from either the principal or consultants.

The author proposes to explore a similar plan in at least two other schools in the forthcoming school year, involving a procedure whereby both the primary division and the junior division within each school attempt a similar activity with the support of the principal and one or more outside leaders.

EVALUATION

Reference has been made in the preceeding sections to various aspects of evaluation of the program, namely teachers' perception of the ability and reliability of the volunteers, documentation of the activities of the volunteers, the teachers' stated advantages to themselves, and the overall successes and shortcomings in the teachers' attempts to reorganize and

implement a plan for vertical integration. The one aspect of evaluation which requires further reference is the area of benefits to students and particularly student gains.

The general benefits to pupils are neatly summarized in a paragraph in the final report of one of the teachers who states,

"We feel that the children benefitted by the program. Certainly they enjoyed it and we as teachers felt that we were meeting individual needs and yet not spreading outselves too thinly. A greater concentration of time was spent on particular skills in the classroom because the needs were not as diverse and widespread as they normally are in a classroom. By cross-grouping, rather than merely by streaming classes, you can constantly reassess and change the program as the children grow and change."

Evidence of the benefits to the student are shown in the formal evaluation of student gains tabulated in Tables 15 to 26. In each of the tables the information provided is a comparison between the growth of the students in the grade one program matched against either control groups or normative growth data in the particular area for a one year period. The control test data are based on a grade one class in the school and a grade one class in a neighbouring school. The normative growth data for the tests employed is taken directly from the test norms for the age group. Incidentally, it will be noted that both sets of data are quite similar. The availability of the control data on the grade one classes, coupled with the fact that the grade one pupils were in the centre of the cross-grading pattern and therefore probably derived the most benefits from it, accounts for the use of the grade one pupils as a group for evaluation. It is unlikely that the students beyond the grade or level, where the amount

of volunteer help was less and the extension of the cross-grading grouping was more limited, would show as large pupil gains as those registered for the grade one pupils.

Because of the importance to be placed on pupil gains as the ultimate criterion for the success of the program, and because the evaluation was concerned with differences in student gain over an extended period, a complete pre-test and post-test design was employed. Individually administered tests were used because of the age of the pupils. The Peabody Individual Achievement Test was used for the assessment of achievement in mathematics, reading vocabulary, reading comprehension, and spelling, as well as a total achievement score. These tests were administered under controlled conditions by experienced research officers from the Niagara Centre. Every care was taken to obtain fair and objective results. On the basis of observations of the testing procedures administered there is no reason to suspect any bias which would benefit the experimental group over the normative data or the control group data.

One special feature of the tables and graphs merits special attention. In both the experimental data and the normative data the scores are shown for the mean value of each of three mental age groups. The purpose of this treatment of the data is to enable the researcher to compare the growth gains of pupils in the bottom third, middle third, and upper third of the class, grouped on the basis of mental age. Obviously this treatment retains much valuable information which would be lost in determining averages for the entire class as one group. The procedure has the second value of taking into account the strong relationship between mental age and achievement.

Tables 15 to 18 show the mean values in the four areas tested for each of these mental age groups compared with expected results based on data obtained from the combined control groups. Tables 19 to 22 show the mean values for the three groups compared with the normative values. Tables 23 to 25 show the data for the experimental group and the normative values in graphic form with Table 25 showing the total gain for each group. Table 26 shows the grade equivalent of the scores and gains for the mean of each of the three mental age groups. It should be noted that the totals in Tables 25 and 26 are based on the total test, and not merely on the totals of the four sub-scores. The remainder of the test deals mainly with general information, the inclusion of which tended to depress the total scores for the top and bottom mental age groups, and increases the scores for the middle group.

It will be seen in Tables 15 to 18 that the experimental group showed larger growth gains than the control groups in the three reading sub-scores and a lower gain in mathematic sub-scores. In Tables 19 to 22 one notes that the experimental group showed growth rates higher than the normative values in all but four instances, two being of equal rate and the other two lesser rate (for the middle mental age group in reading comprehension and for the lowest mental age group in spelling).

The gains in the four areas measured, and the total growth gains, shown graphically in Tables 23 to 25, provide the reader with the best general picture of the comparative growth gains of the experimental class with normative values. Certain large gains, particularly in the two areas of reading and in spelling are obviously impressive. When one notes that it is in these areas that the greatest concentration of parent help occurred, and that the special reorganization was related to meeting needs in these areas, one can attribute a large

TABLE 15 **Mean Values** of Peabody Individual Achievement Test, Mathematics Subscore for Three Mental Age Groups In Each Class, Pre-test and Post-test.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	MATH	M.A.	MATH
Experimental	Low	14	73	14	82	21
	Mid	13	80	16	92	26
	High	13	87	22	99	32
Expected (based on 2 controls)	Low	14	70	19	85	25
	Mid	17	83	23	90	32
	High	14	106	24	116	34

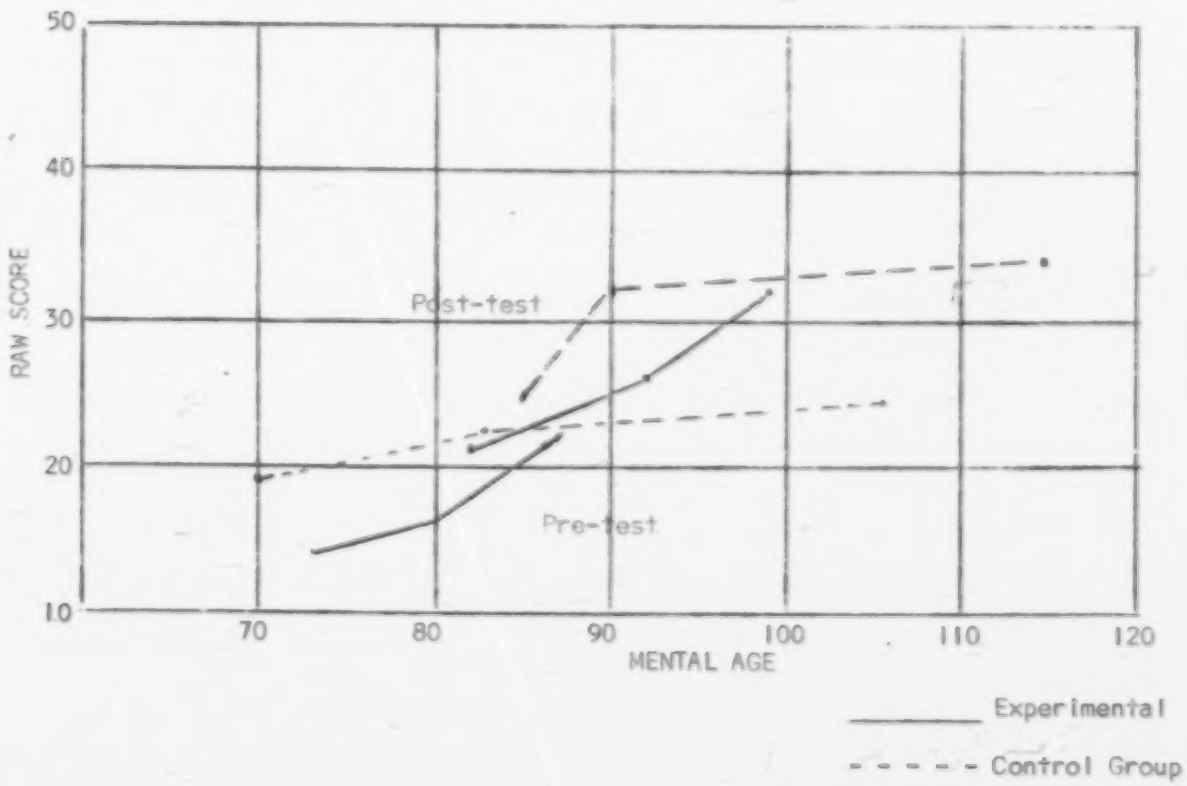


TABLE 16 Mean Values of Peabody Individual Achievement Test, Reading Recognition for Three Mental Age Groups in Each Class, Pre-test and Post-test.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Recog.	M.A.	Recog.
Experimental	Low	14	73	15	82	24
	Mid	13	80	20	92	30
	High	13	87	23	99	35
Expected (based on 2 controls)	Low	14	70	16	85	26
	Mid	17	83	17	90	28
	High	14	106	16	116	26

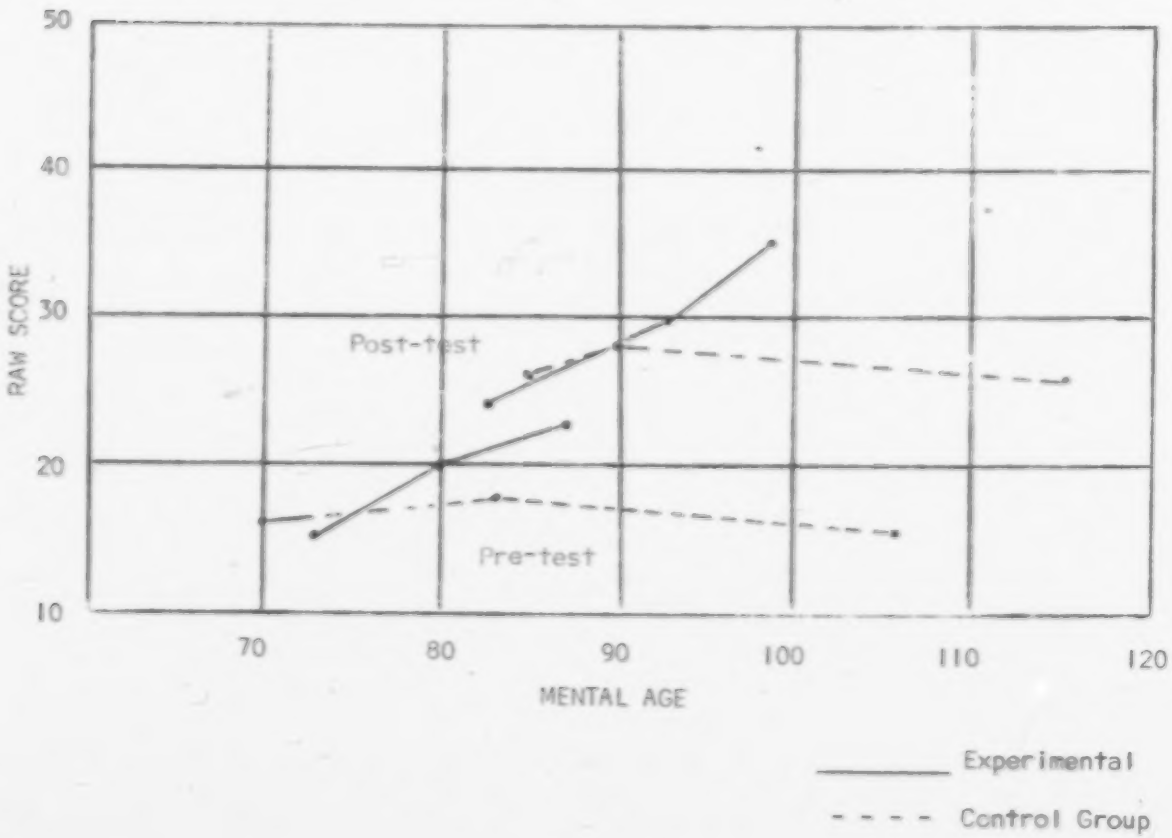


TABLE 17 Mean Values for Peabody Individual Achievement Test, Reading Comprehension Subscore for Three Mental Age Groups in Each Class, Pre-test and Post-test.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Comp.	M.A.	Comp.
Experimental	Low	14	73	15	82	22
	Mid	13	80	19	92	27
	High	13	87	22	99	34
Expected (based on 2 controls)	Low	14	70	16	85	26
	Mid	17	83	16	90	26
	High	14	106	16	116	27

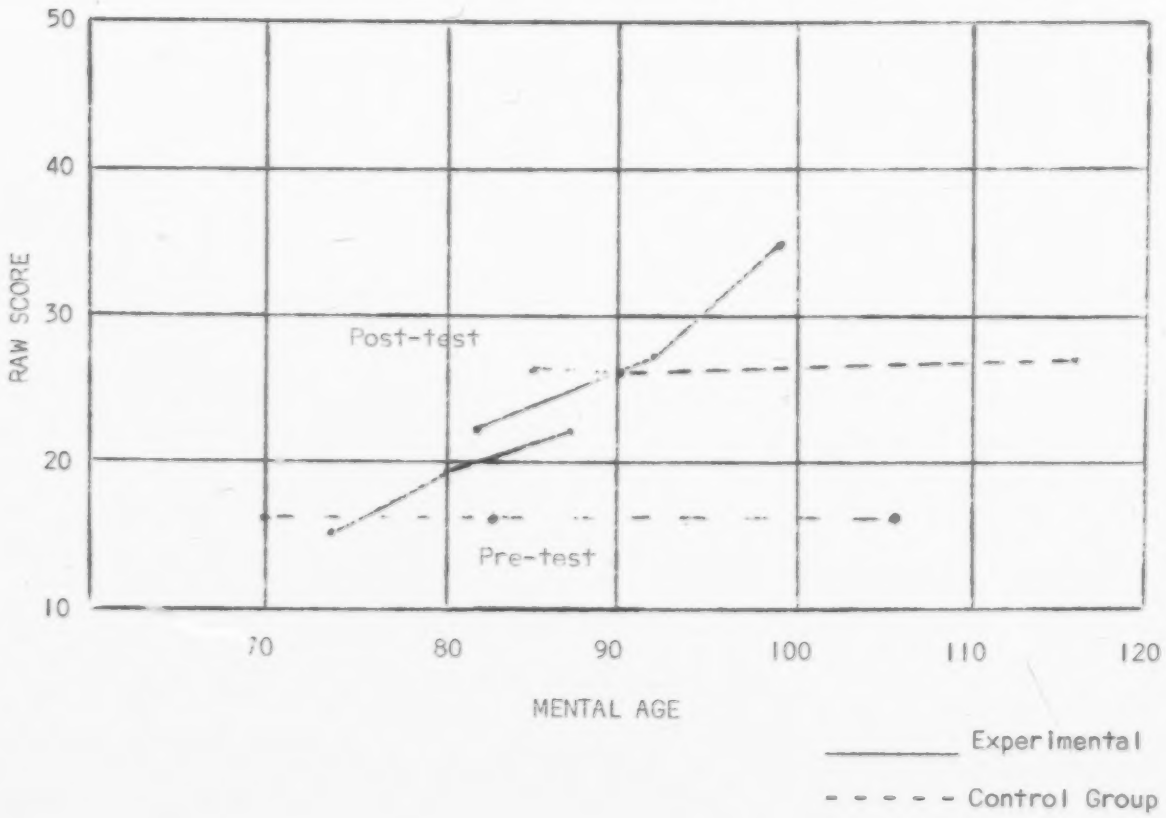


TABLE 18 Mean Values of Peabody Individual Achievement Test, Spelling Subscore for Three Mental Age Groups in Each Class, Pre-test and Post-test.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Spell.	M.A.	Spell.
Experimental	Low	14	73	15	82	21
	Mid	13	80	18	92	27
	High	13	87	20	99	29
Expected (based on 2 controls)	Low	14	70	18	85	24
	Mid	17	83	18	90	28
	High	14	106	19	116	26

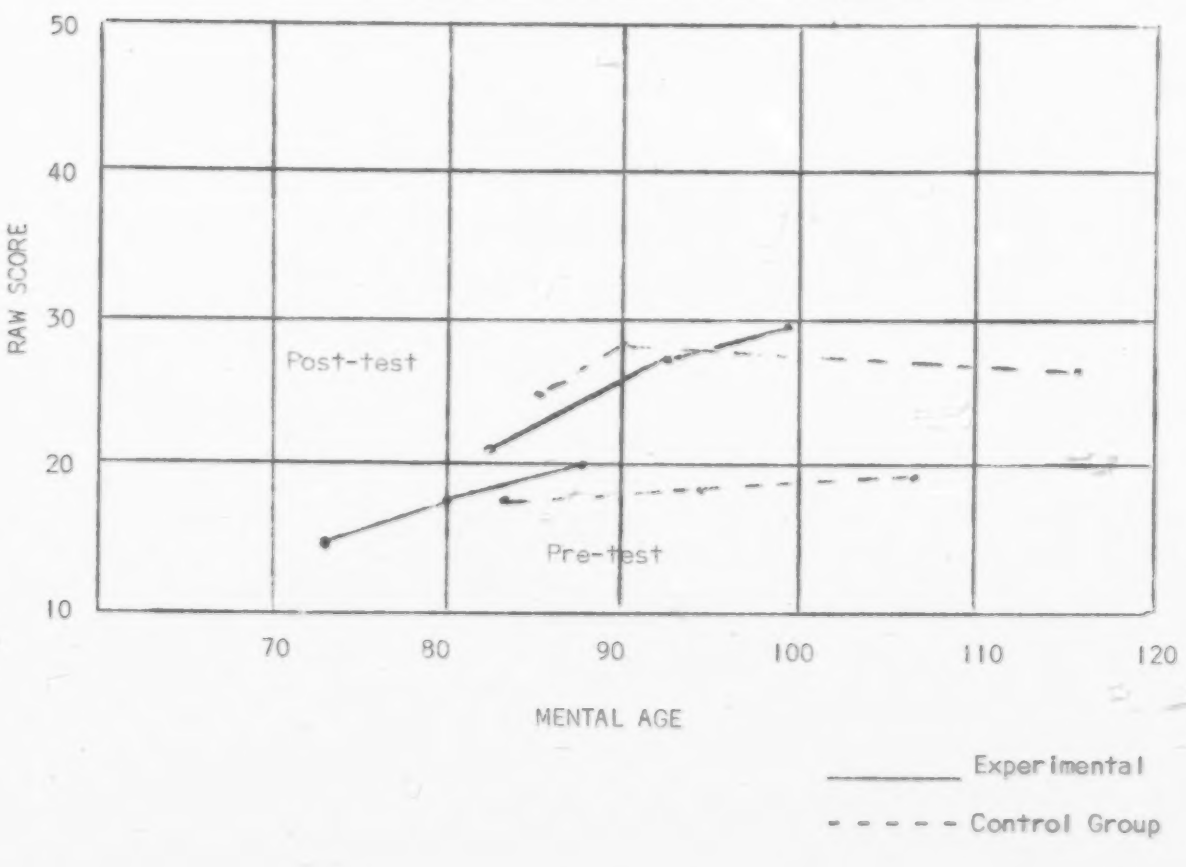


TABLE 19 Comparison of Mean values of the Peabody Individual Achievement Test, Mathematics Sub-test for three Mental Age groups in the experimental classes, Pre-test and Post-test, using Normative Data.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Math	M.A.	Math
Experimental	LOW	14	73	14	82	21
	MID	13	80	16	92	26
	HIGH	13	87	22	99	26
Normative	LOW	14	73	14	82	21
	MID	13	80	16	92	25
	HIGH	13	87	22	99	31

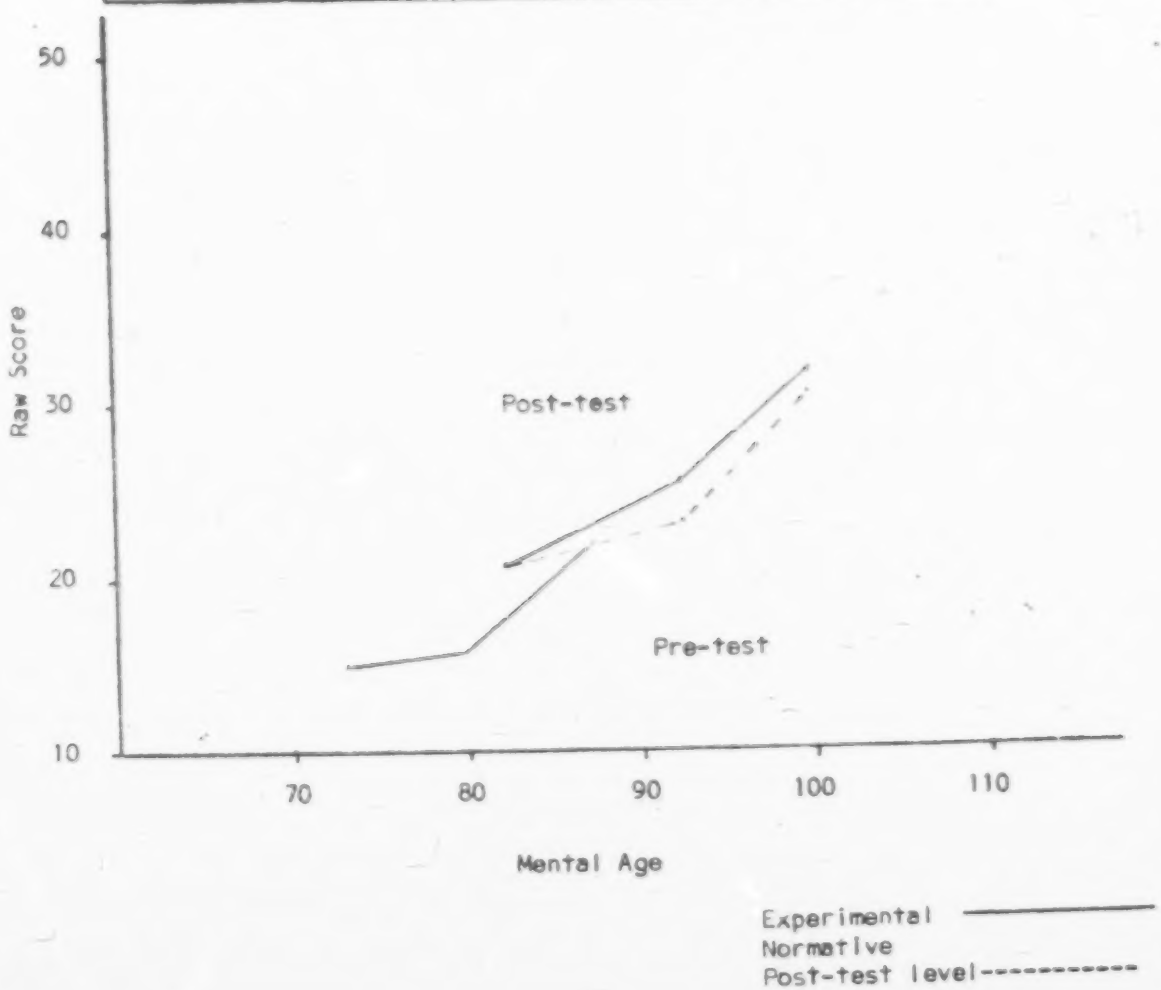


TABLE 20 Comparison of Mean Values of the Peabody Individual Achievement Test, Reading Recognition Sub-test for three Mental Age groups in the experimental classes, Pre-test and Post-test, using Normative Data.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Recog.	M.A.	Recog.
Experimental	LOW	14	73	15	82	24
	MID	13	80	20	92	30
	HIGH	13	87	23	99	35
Normative	LOW	14	73	15	82	24
	MID	13	80	20	92	26
	HIGH	13	87	23	99	28

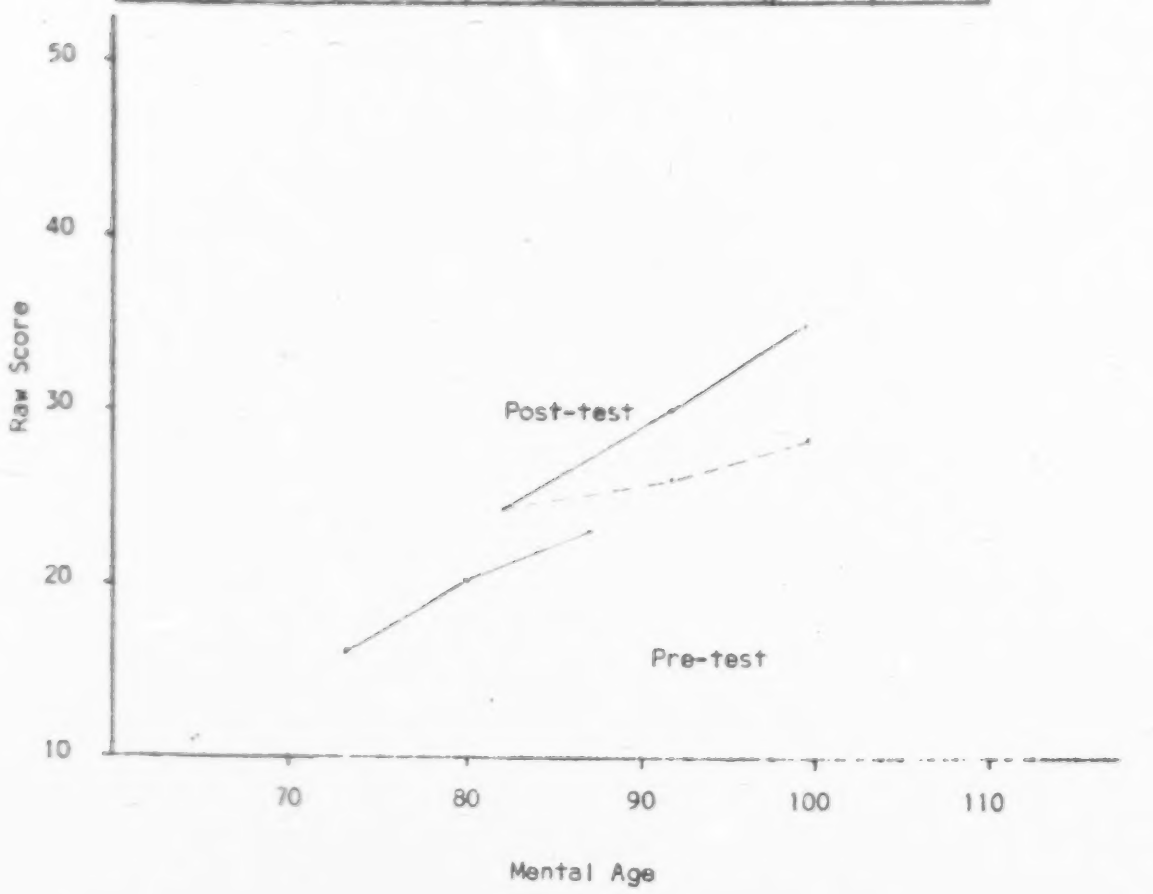


TABLE 21 Comparison of Mean Values of the Peabody Individual Achievement Test, Reading Comprehension Sub-test for three Mental Age groups in the experimental classes, Pre-test and Post-test, using Normative Data.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Comp.	M.A.	Comp.
Experimental	LOW	14	73	15	82	22
	MID	13	80	19	92	27
	HIGH	13	87	22	99	34
Normative	LOW	14	73	15	82	20
	MID	13	80	19	92	28
	HIGH	13	87	22	99	30

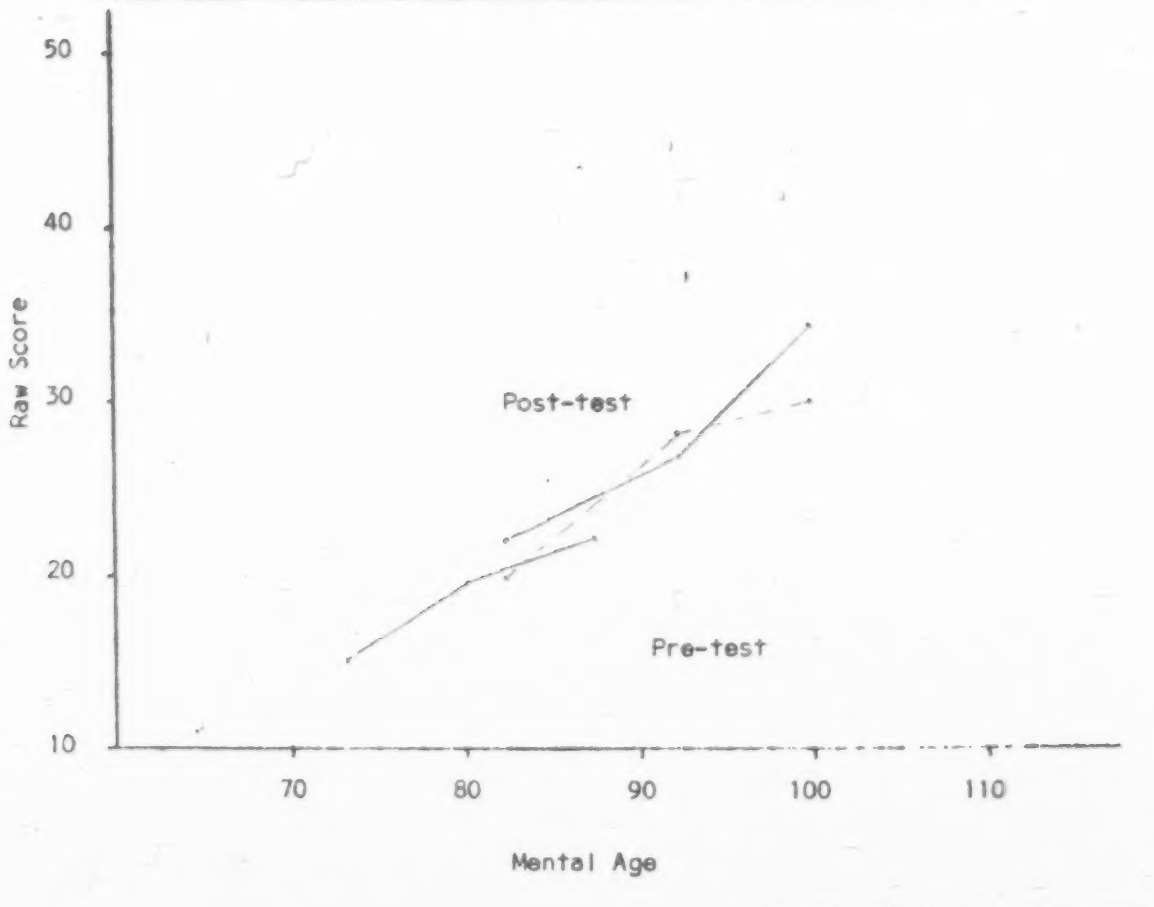


TABLE 22 Comparison of Mean Values of the Peabody Individual Achievement Test, Spelling Sub-test for three Mental Age groups in the experimental classes, Pre-test and Post-test, using Normative Data.

CLASS	M.A. GROUP	N	PRE-TEST		POST-TEST	
			M.A.	Spell.	M.A.	Spell.
Experimental	LOW	14	73	15	82	21
	MID	13	80	18	92	27
	HIGH	13	87	20	99	29
Normative	LOW	14	73	15	82	23
	MID	13	80	18	92	26
	HIGH	13	87	20	99	27

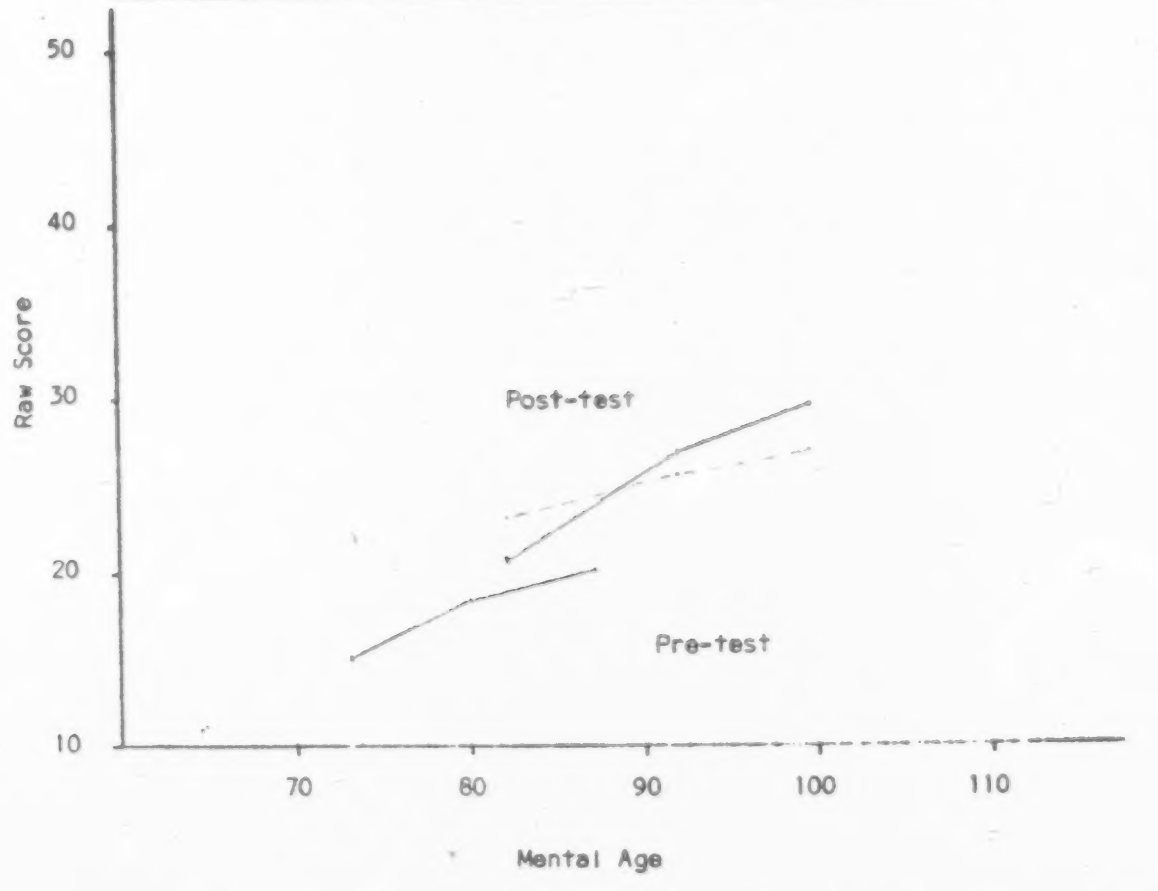


TABLE 23 Graph showing growth gains in Mathematics and Reading Recognition sub-scores of experimental classes compared with the expected normative growth gain, both based on identical pre-test levels.